Protecting Nature Conservation Values on Private Land in Tasmania

by

Sharon Moore

Bachelor of Arts, Bachelor of Laws (Graduate)
(Australian National University, Canberra)

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Master of Environmental Studies
School of Geography and Environmental Studies
University of Tasmania
Hobart, Tasmania, Australia

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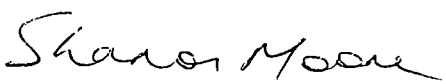
Statement

This thesis contains no material which has been accepted for the award of any other higher degree or graduate diploma in any tertiary institution. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person, except when due reference is made in the text of the thesis.



Sharon Moore
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Abstract

In Tasmania, the focus of the conservation movement and government conservation authorities has been on establishing and managing protected areas on public land. That approach is not adequate to ensure that threats to biodiversity from habitat destruction and fragmentation are redressed. These threats come equally from private land, and private land must be brought into the conservation planning and management system.

This thesis examines measures being taken to improve the protection of nature conservation values on private land in Tasmania. Commonwealth and State government policy and legislation, as well as the role of local government, is evaluated. Measures taken in other Australian States and overseas with the aim of achieving nature conservation on private land are examined as a comparison and a source of information to devise an appropriate system for Tasmania. The Tasmanian Resource Management and Planning System, including planning schemes and decisions of the Resource Management and Planning Tribunal, is examined in detail.

Both the current emphasis on voluntary community-based programs and the existing limited regulatory measures are found to be an inadequate means of achieving nature conservation goals on private land. An integrated regulatory approach is achievable by using the mechanisms available in the Resource Management and Planning System along with regional conservation planning. Financial incentives and funding of voluntary community-based efforts, as means of educating and motivating landholders and rural communities, are an essential element of a comprehensive program to achieve nature conservation on private land.

Acknowledgements

Many people, in State and Commonwealth government departments, local government and conservation groups, provided information which has enabled me to keep this thesis as current as possible. Most of them are listed under "Personal Communications" at the end of the thesis. My thanks to all of them, whether or not their names are listed.

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I am indebted to the Public Land Use Commission of Tasmania for employing me during part of its Regional Forest Agreement inquiry in 1996. As well as providing me with a living, I gained background information and inspiration for my thesis, as well as valuable insights into the public policy process in Tasmania.

Lastly, thanks to my friends at the University of Tasmania and elsewhere, and especially my partner Scott Morgan, proof reader extraordinaire, for their support and encouragement during the research and writing of this thesis.

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Abbreviations and acronyms

ACF	Australian Conservation Foundation
ANCA	Australian Nature Conservation Agency
ANZECC	Australia and New Zealand Environment and Conservation Council
CAR	Comprehensive, Adequate and Representative (reserve system)
CEC	Commission of the European Communities
CART	Conservation, Amenity and Recreation Trust
CRP	Conservation Reserve Program
DCNR	Department of Conservation and Natural Resources (Victoria - former name)
DELM	Department of Environment and Land Management (Tasmania)
DPIE	Department of Primary Industries and Energy (Commonwealth)
DPIF	Department of Primary Industry and Fisheries (Tasmania)
EMPCA	Environmental Management and Pollution Control Act 1994 (Tasmania)
EPAA	Environment and Planning Assessment Act 1979 (New South Wales)
ESA	Environmentally Sensitive Areas Scheme
EU	European Union
FIAT	Forest Industries Association of Tasmania
FPU	Forest Practices Unit
HSCERA	House of Representatives Standing Committee on Environment, Recreation and the Arts
IEAG	Independent Expert Advisory Group
IPO	Interim Protection Order
LEP	Local Environment Plan
LUPAA	Land Use Planning and Approvals Act 1993 (Tasmania)
MAFF	Ministry for Agriculture, Fisheries and Food
MVC	Meander Valley Council
NCC	Nature Conservancy Council
NGO	Non-governmental organisation
NHT	Natural Heritage Trust
NMC	Northern Midlands Council
NPWA	National Parks and Wildlife Act 1970 (Tasmania)
NSW	New South Wales
OBT	One Billion Trees

OECD	Organisation for Economic Co-operation and Development
PLUC	Public Land Use Commission
PTR	Private Timber Reserve
RFA	Regional Forest Agreement
RMPAT	Resource Management and Planning Appeals Tribunal
RMPS	Resource Management and Planning System
RPDC	Resource Planning and Development Commission
SEPP	State Environmental Planning Policy (New South Wales)
SDAC	Sustainable Development Advisory Council
SPPA	State Policies and Projects Act 1993 (Tasmania)
SSSI	Site of Special Scientific Interest
TCT	Tasmanian Conservation Trust
THP	Timber Harvesting Plan
TSPA	Threatened Species Protection Act 1995 (Tasmania)
TWS	The Wilderness Society
UK	United Kingdom
UNEP	United Nations Environment Program
US	United States of America
UNESCO	United Nations Educational, Scientific and Cultural Organisation
WRP	Wetlands Reserve Program

Chapter 1 - Introduction

> *Protected areas are a seductively simple way to save nature from humanity. But sanctuaries admit a failure to save wildlife and natural habitat where they overlap with human interest, and that means 95 per cent or more of the earth's surface. Conservation by segregation is the Noah's Ark solution, a belief that wildlife should be consigned to tiny land parcels for its own good and because it has no place in our world* (Western et al. 1989:314).

1.1 Background

The quote above from David Western and other authors of *Conservation in the Twenty First Century* is reflected in the general recognition by conservation policy makers that the formal reserve system is inadequate to protect a full range of nature conservation values, in particular biological diversity (SEAC 1996; ESAC 1992; SDAC 1996). It is also widely recognised that nature conservation must be incorporated as far as possible into land use decisions and practices if biological diversity is not to be further limited by human activities (McNeely 1989; Australia 1996; Soulé 1989).

This recognition has led to a focus on "off-reserve conservation" by conservation policy makers and land managers in recent years. "Off-reserve conservation" means "conservation management of land through mechanisms other than, or in addition to, formal public reserve systems" (PLUC 1996e:2), and includes conservation on private land (PLUC 1996e). Off-reserve conservation is a sub-set of "in situ conservation" which is "the maintenance of living organisms in the natural habitat of which they form part with little or no human intervention in the ways they grow, reproduce or die" (Blay and Pietrowicz 1993:251) and is to be distinguished from "ex-situ conservation", which involves the maintenance of living organisms outside their natural habitats, for example, in zoos and botanical gardens (Blay and Pietrowicz 1993).

The need for off-reserve conservation has been recognised internationally, through the Convention on Biological Diversity[1] (the Biodiversity

[1] 5 june 1992, (1992) ILM 31 818.

Convention) in 1992. The Convention provides that in-situ conservation may take place within or outside formal protected areas (the Biodiversity Convention is discussed in detail in Chapter 2).

Australia is party to a number of international agreements requiring it to protect the country's natural values, including the Biodiversity Convention and the Framework Convention on Climate Change, discussed in Chapter 2. The Commonwealth has ultimate responsibility for Australia's implementation of international agreements, however in recent years it has decided to fulfil these obligations in partnership with State and local government rather than by directly fulfilling them through its own legislation and programs (Dixon 1994; Hill 1998).

While the Commonwealth has broad policy and agenda-setting responsibilities, it also has enormous influence and potential powers, both because of its Constitutional powers and its revenue-raising and administering functions. Commonwealth policy and actions regarding forestry have been particularly influential, with recent decisions on woodchip exports (TWS 1996), and the Regional Forest Agreement process (Graham 1996; PLUC 1996e; 1997b; 1997c) having major implications for conservation of native vegetation on private land.

The detail and implementation of programs for nature conservation on private land are, however, largely a responsibility of State and local government. Much of the focus on off-reserve conservation, particularly in Tasmania, has been on the conservation of native vegetation on private land, largely through voluntary, community-based programs such as Landcare, Save the Bush (now called Bushcare) and Land for Wildlife (see Saunders et al. 1995 for a thorough description of various voluntary initiatives). While these programs are gaining increased participation in rural areas, they cannot of themselves be adequate to protect all areas of remnant bush on private land, given varying intentions of landowners, changes in land ownership and land use and, commonly, the lack of a regional or statewide approach to conservation (Gilfedder and Kirkpatrick 1995a, 1995b).

A range of regulatory mechanisms are available to ensure nature conservation on private land, including vegetation clearance controls, and have been used with varying degrees of success in mainland Australian States. Tasmania's regulatory response has been ad hoc and mainly limited to the regulation of private forestry. However, the Tasmanian Resource Management and Planning System (RMPS), State legislation mainly implemented by local government, has a range of mechanisms, including land use planning, which could be used to ensure nature conservation on private land.

1.2 Aim and objectives

The thesis argues that the existing institutional framework of nature conservation on private land in Tasmania is inadequate, and that an integrated system of regulation is required to complement the existing voluntary programs. The thesis evaluates the existing legislative framework, and suggests alternative means of achieving a greater level of conservation on private land in Tasmania. Measures in place elsewhere in Australia and overseas are used as a comparison to the current largely non-regulatory system in Tasmania, and as a basis for deriving recommendations for improving Tasmania's poor record in conservation on private land. The thesis considers a range of measures appropriate for both rural and urban fringe areas, where the major losses in native vegetation are occurring (SDAC 1996).

The objectives of the thesis are:

1. To analyse the need for conservation on private land, both generally, and particularly in Tasmania.

2. To examine Australia's obligations for conservation on private land under international agreements, and to evaluate the implementation of those obligations by the Commonwealth and Tasmania.

3. To evaluate the usefulness of voluntary community-based programs in achieving conservation on private land.

4. To examine the role of regulation in achieving conservation on private land, including the extent to which landholders should be compensated for land-use changes required to ensure conservation objectives.

5. To evaluate the role of local government in ensuring conservation on private land, including the potential application of the Tasmanian Resource Management and Planning System.

6. To recommend appropriate measures to ensure nature conservation on private land in Tasmania.

1.3. Research approach

The major method used is literature review and analysis. The thesis focusses to a large degree on analysis and evaluation of various Tasmanian and other Australian government programs, with information on overseas programs used as a comparison and to suggest alternative measures.

Various types of documentation from the Tasmanian RMPS are examined to determine the degree to which the system requires and provides for the protection of native vegetation on private land. In particular, planning schemes for a number of municipalities and decisions of the Land Use Planning and Review Panel for 1996 and 1997 have been examined. Aspects of the topic were discussed with officers of Tasmanian and interstate government departments, local government bodies and conservation groups.

The Tasmanian Public Land Use Inquiry in support of the Commonwealth-Tasmania Regional Forest Agreement was in progress for much of the time during which the thesis was being researched. The Commission produced a large number of reports which provide valuable background information on use of forested land in Tasmania. Documents produced by the Commission are used as a source of information, and in some cases their approach and recommendations are analysed. The submissions to the inquiry are used as a source of information on public perceptions of various aspects of forestry management and planning in Tasmania. Work

carried out by the author for the Commission provided useful background information and contacts.

A literature review was carried out with the aid of computer-based search tools through the University of Tasmania library, including Current Contents, APAIS, HERITAGE: ENDANGER, Australasian Legal Literature Index, IDEAL and Index to Legal Periodicals. The main fields used for searching included "private land", "conservation on private land", "off-reserve conservation" and "environmental planning". In addition, personal contacts referred to a number of recent conferences regarding off-reserve conservation. These were followed up, and, where possible, papers obtained from authors where the proceedings had not yet been published. Local meetings and workshops on off-reserve conservation were attended where possible, for example at Campbell Town on 20 November 1996. Submissions were also made to reviews of planning instruments, and hearings and seminars attended, for example on the Hobart City Council's vegetation clearance planning scheme amendments (6 October 1997).

Due to the topical nature of the thesis, academic or other professional references were not always available, particularly regarding outcomes from the Regional Forest Agreement process and other areas of current policy consideration by governments, or recently established programs. In these areas the thesis therefore uses personal communications and media reports as current sources of information.

1.4 Chapter outline

Chapter 2 gives a brief account of the reasons given in the literature for a much greater focus on conservation on private land, with a particular focus on habitat destruction and fragmentation. The Chapter also discusses Australia's international obligations to protect nature conservation values on private land, and, given the extent and impact of native vegetation clearance in Australia, the Commonwealth's response to these obligations.

Chapter 3 discusses the reasons that conservation on private land is necessary in Tasmania. The existing legal and administrative framework for conservation on private land in Tasmania is then discussed.

Regulation of forest practices on private land under the Forest Practices Act 1985 is evaluated, and the framework for environmental planning provided by the RMPS is examined. However other aspects of the regulatory framework for conservation on private land in Tasmania, including the threatened species legislation and the land use planning system, are discussed in detail in Chapter 5, where they are compared with regulatory mechanisms used in other Australian States.

Chapter 4 analyses voluntary mechanisms, such as the community-based programs Bushcare, Landcare and Land for Wildlife and more formal approaches such as voluntary management agreements, and evaluates the usefulness of such programs to achieve conservation on private land.

Chapter 5 examines the role of regulatory mechanisms in achieving conservation on private land. The merits of two types of approach, habitat protection and species protection, are examined, as well as some approaches which combine the two. Chapter 5 also evaluates the role of local government in ensuring nature conservation on private land, including problems encountered due to influential vested interests, and the inherent problems that arise from the need to raise money through rates. The land use planning component of the RMPS, which has now been in place for over three years, is evaluated for its potential to protect natural values on private land, and the degree to which it has achieved this to date. The use of management agreements in conjunction with compulsory conservation is also discussed.

Chapter 6 makes a number of conclusions concerning the need for much greater integration of nature conservation into the planning and regulation of private land use in Tasmania, using a bioregional approach. Recommendations are made on the most appropriate form for such a system.

Chapter 2 - Conservation on private land as an international obligation

2.1 The limitations of formal reserves

Landscapes in Western developed countries such as Australia often consist of a mosaic of land uses, with nature reserves such as national parks increasingly becoming islands amidst a sea of potentially hostile land uses. A number of insights into the problems associated with this insularisation and ways to ameliorate them have been developed through the relatively new science of conservation biology (see for example Schafer 1990; Soulé 1989; Western and Pearl 1989; Saunders et al. 1987). Unprotected natural areas (such as remnants of native vegetation in farmland) suffer from the same problems (Saunders et al. 1987; SEAC 1996), however they have the added threat that they are not protected from changing land use patterns which can cause destruction or degradation (Kirkpatrick and Gilfedder 1995a).

Biological diversity in habitat fragments, including nature reserves, which are isolated from similar natural areas, is potentially threatened by a number of factors which influence the number and variety of species which can survive there. In these "island" situations, potential sources of natural immigrants to an area may be eliminated, immigration will be reduced by the conversion of the natural landscape between habitat patches or reserves and vital resources outside reserve boundaries will be lost (Schafer 1990). Species extinctions are greater in small isolated areas, where there are fewer species and where alien habitats form a barrier to dispersal (Diamond 1989; EPAC 1992). Reduction of genetic diversity by isolation of small populations can result in extinction (SEAC 1996). Boundaries with human-altered ecosystems can cause significant problems such as increased predation and invasion by exotic species and diseases (edge effects), imbalances in populations due to changes in availability of external food sources, degradation of air and water quality from outside sources, and urban development along park boundaries (Schafer 1990; Hobbs 1987; SEAC 1996).

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number and variety of species increases with a decrease in size of the natural area, so that large areas such as some national parks have a much greater chance of protecting a larger number and greater variety of species, and the ecological processes that support them compared to smaller reserves or fragments. Examples abound of reduction of species in small reserved areas (Schafer 1990). However, with a large number of small reserves dotted through a landscape a greater variety of habitats may be protected, and, if distances are not too large and connectivity is maintained, species threatened in one area can migrate to another (Schafer 1990). In areas where there are no large natural areas left, a number of small reserves, or some other means of protecting habitat fragments, becomes the only option available (SEAC 1996). Effective conservation requires the protection of ecosystem processes, wherever possible by protecting large areas as reserves, and otherwise, by maintaining connectivity between smaller reserves (McNaughten 1989).

2.2 The need for conservation on private land

In addition to the problems with formal reserves outlined above, many species and communities simply are not included in the formal reserve system. Conservation, in Australia, tends to be a "residual" land use, that is concentrated in areas which are not suitable for commercial uses, particularly forestry and agriculture, because they are on poor soils or in unsuitable locations (SEAC 1996). Some types of natural features are represented many times in reserves and others are not represented at all. The State of the Environment Report for Australia (SEAC 1996) states that reserves are currently inadequate to protect some areas of rainforest, wet sclerophyll forests, eucalypt scrubs and shrublands, heathlands and native grasslands.

Much of the land which surrounds nature reserves is privately owned - these areas, particularly where they are still in a natural or relatively natural state, can be invaluable as buffer zones around nature reserves, and as corridors between reserves. If large enough, or well enough connected with other natural areas, they can be nature reserves in their own right. Governments are unwilling to purchase areas of private land for

conservation, either due to lack of funding (HSCERA 1993) or political problems caused by compulsory acquisition (Farrier nd).

In Tasmania, the Public Land Use Commission (PLUC) undertook an inquiry into mechanisms for achieving nature conservation on private land during 1996 and 1997, in support of the Tasmania-Commonwealth Regional Forest Agreement (RFA). The Terms of Reference for the inquiry makes it clear that aquisition of private land is to be a last resort for achieving the nature conservation goals of the RFA (PLUC 1996a). The RFA process is discussed in more detail in section 2.5.4.

While the need for nature conservation throughout the landscape, both in and outside formal reserves, is becoming increasingly well understood, there is also an expanding literature on the interactions of nature conservation with human needs. A number of writers have commented that the national park system has resulted in a defensive "fortress mentality" by people protecting those parks (Farrier 1995a; McNeely 1989), and worse still, an attitude by many that the protection of nature in reserves obviates the need to care for the rest of the environment, resulting in the "trashing" of once high conservation areas outside national parks (McNeely 1989). McNeely argues for the need for conservation to be part of humanity's ethic of every day living - that relying solely on reserves to provide for nature conservation could indeed be disastrous. Farrier (1996) points out that the rationale for nature conservation has changed in recent times, since the recognition that the protection of biodiversity must be the greatest priority for conservation, rather than the setting aside of spectacular scenic areas for recreation or spiritual fulfillment. Biodiversity conservation must be managed across whole landscapes, to allow ecosystem processes and natural disturbance regimes to occur, and this means that the need for conservation does not stop at the boundary between public and private land (Breckwoldt 1996; Breckenridge 1995; Bennett 1995).

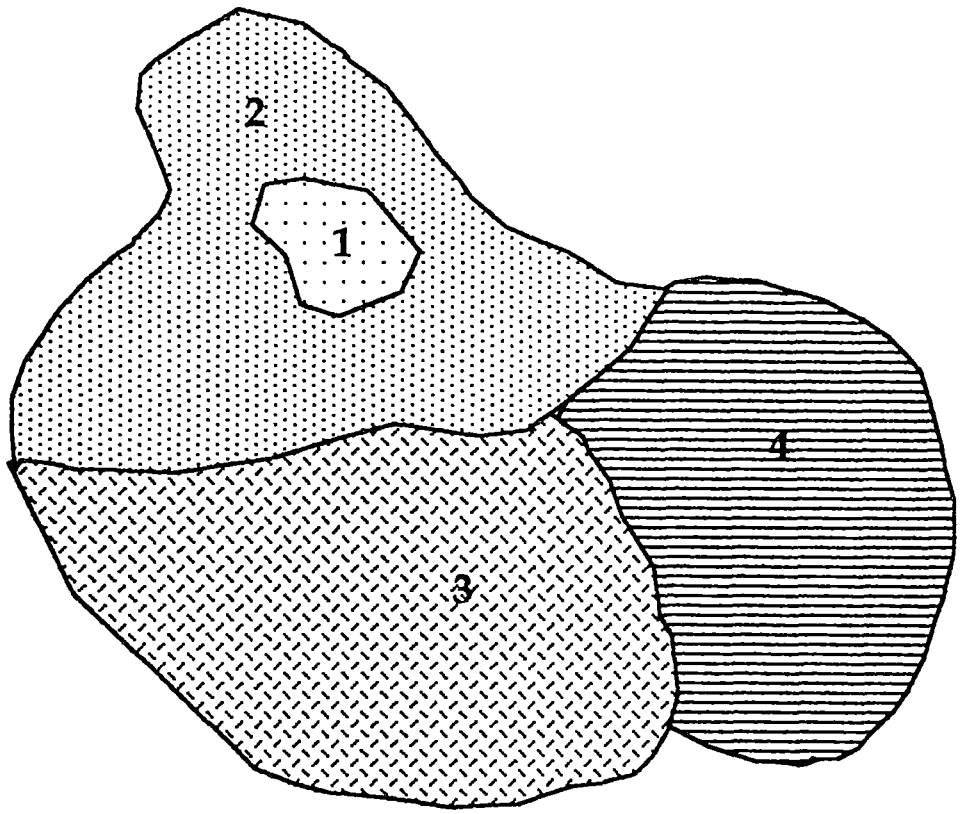
As McNaughton (1989:110) comments: "It is impossible to set aside an area sufficiently large as to be self-contained; there will always be spillover between reserves and surrounding areas. This can be a blessing if that spillover is regarded favorably by humans in adjoining areas, or a curse

requiring careful management if humans consider spillover detrimental to their interests". One of the greatest challenges for conservationists is to ensure that nature conservation is a vital consideration in land uses outside nature reserves, whether those areas adjoin nature reserves or not. In developed countries such as Australia with an entrenched system of private land ownership, this may have to involve the restriction of landholders' "rights" to manage their land with no regard to nature conservation or the impacts of their actions on surrounding areas.

Biosphere reserves, a concept created by the United Nations Environment, Scientific and Cultural Organisation (UNESCO) "Man and the Biosphere" program, are a useful way to integrate nature conservation with human needs (Batisse 1982). The concept involves the strict protection of a core area of high nature conservation value, a buffer zone where only activities compatible with the protection of the core area are allowed, and a transition area, where activities consistent with the sustainable development of the area are carried on, through co-operative arrangements between nature conservation managers and the local population (IUCN 1979; Farrier 1995a). Figure 2.1 explains the concept.

As Miller (1996) points out, Biosphere Reserves are one of a number of ways of integrating nature conservation and land use planning. The related concept of "bioregional planning", planning for land, water or other natural resource use, and conservation at the landscape or ecosystem level, is increasingly recognised as necessary to ensure sustainable land use and nature conservation across land tenures. The methods used to achieve bioregional planning differ, yet involve a high degree of public participation or consultation (Miller 1996). There are differing opinions on the value of regulative mechanisms as part of bioregional planning. The value of regulation as part of planning for conservation at the regional level will be discussed in Chapter 5.

Figure 2.1 The UNESCO Biosphere Reserve concept



Explanation: 1. Natural or Core Zone: Managed for minimum human interference, to serve as a baseline for the biological region. Non-manipulative research permitted.

2. Manipulative or Buffer Zone: Managed for research, education and training. Traditional activities such as timber production, fishing and grazing permitted in a controlled manner.

3. Reclamation or Restoration Zone: Managed to study and reclaim lands and natural resources where heavy natural or human alteration has disrupted biological processes.

4. Stable Cultural Zone: managed to protect ongoing cultures and land uses which are in harmony with the environment; local residents and their activities are to continue, but new technologies may be strictly controlled. Source: IUCN 1979

The concept of "off reserve conservation" has also developed in response to the need to ensure nature conservation across a range of land tenures. As noted in Chapter 1, off-reserve conservation is the conservation of nature outside protected areas, that is, on private land or other non-protective land tenures. However, threats to the remaining natural areas on private land are growing, as the need for their conservation is becoming increasingly obvious.

2.3 Vegetation clearance in Australia

The destruction of native vegetation in Australia has been extensive since Europeans arrived (SEAC 1996; Flannery 1994). In the last ten years, a growing awareness that native vegetation loss has greatly reduced the productive capacity of the land, and to a lesser extent, its natural values, has led to greater government and community involvement in programs to redress land degradation and, again to a lesser extent, habitat destruction. This section discusses the extent of habitat loss in Australia, as a background to a discussion of international obligations and governmental responses to them.

Habitat loss and fragmentation has been identified by Diamond (1989) as the leading one of the "evil four" factors leading to extinctions today. (The other three are direct over-killing by humans, introduction of exotic species, and secondary extinctions [Diamond 1989]). There is a vast and expanding literature on the impacts of broadscale land clearance in Australia causing habitat loss and fragmentation (for example DEST 1995, 1996; ESAC 1992; Alexandra 1995a).

While the original vegetation of much of Australia was modified through the land use practices of the Aboriginal people, in particular fire, it had reached a new equilibrium over tens of thousands of years (SEAC 1996; Flannery 1994). European occupation of Australia brought with it vastly different land use practices which have had a disastrous impact on the vegetation and fauna it supports (SEAC 1996; Flannery 1994).

Table 2.1 identifies selected threats to Australian birds, marsupials, rodents and reptiles, with habitat clearance and/or fragmentation constituting the

major threat. These figures do not include threats to invertebrates, which are to a large degree unknown (SEAC 1996).

For much of European history in Australia, governments have actively encouraged clearance of native vegetation to establish agriculture. Until 1983 provisions to encourage clearance of native vegetation through tax deductibility were included in the Income Tax Assessment Act 1936, at the same time as soil conservation measures were tax deductible (Blythe and Kirby 1984; SEAC 1996). These provisions have not entirely ceased - farmers can still deduct the full cost of clearing in the year of expenditure if they use their own equipment and employees (SEAC 1996).

Table 2.1 Sources of current threats to Australian bird, marsupial, rodent and reptile species

	Birds		Marsupials		Rodents		Reptiles	
Threatening Process	C	S	C	S	C	S	C	S
Habitat clearance and/or fragmentation	32	4	13	3	3	4		35
Altered fire regimes	16	35	1	16		2		10
Grazing and/or trampling	10	35	5		1	6		21
Erosion	1	1						
Environmental weeds	2	9						5
Forestry operations	3	14	2	1		1		6
Changed hydrological regimes	1	3						
Shortage of nest hollows	3	20	1					
Cropping								21
Urban development	4	3						14
Soil degradation								9
Habitat drainage								4
Rock removal								4
Loss of genetic diversity			1	1				

Note: C = confirmed; S = Speculative Source: SEAC 1996

The figures in each column are the numbers affected by each process; however, a species may be affected by more than one process.

Australia's rate of destruction of native vegetation is among the highest in the world, with an estimated 664 000 hectares (larger than Kosciusko

National Park) cleared per year (Pittock and Nias 1995; SEAC 1996). Vegetation clearance is carried out to provide land for agriculture, for forestry (either clear felling and leaving to regenerate, or for plantation establishment) and for suburban and semi-rural settlements (subdivisions), which can also consume productive agricultural land (SEAC 1996; SDAC 1996).

Forestry can have disastrous effects on forest fauna and flora, for example species can become locally extinct when confined to small "islands" of habitat that do not support viable populations (SEAC 1996). In addition, while forestry is less extensive throughout Australia than some of the other threatening processes identified by SEAC (1996) it occurs in the most biologically diverse areas (SEAC 1996). Forestry alters hydrology, increases erosion and sedimentation, removes the major structural components of the ecosystem and reduces the availability of suitable habitat for many animals including forest-adapted endangered species, particularly arboreal mammals (SEAC 1996).

The spread of Australian cities and towns, particularly in coastal areas, is also destructive of biodiversity. Even so-called "sensitive developments" pose risks to the integrity of remaining native ecosystems, with the potential introduction of feral animals and invasive weeds, possible changes to drainage patters and soil structure from building and road construction and altered nutrient levels from run-off and septic tanks (SEAC 1996).

Replacement of native vegetation either directly by clearance for agriculture or by gradual destruction by grazing, salination or changes in water availability, has lead to damage by erosion, destroyed soil structure, changed soil chemistry and loss of biodiversity (SEAC 1996). Forestry and changes to land use have been estimated to cause 24.6% of Australia's net CO2 emissions (as at 1994) (ICESD 1997), and could be as high as 45% (SEAC 1996).

Generally agriculture, forestry and urban development are recognised as the greatest causes of habitat destruction (for example SEAC 1996; SDAC 1996). Firewood collection is also a significant cause of habitat destruction

and fragmentation, however there is very little information available on the extent of firewood collection in Australia and its environmental impacts. A research report by the World Wide Fund for Nature (WWF 1996) found that firewood collection has considerable long-term incremental affects, including simplification of community structure, impacts on nutrient recycling, habitat and food resources for wildlife. In 1992, the Resource Assessment Commission estimated annual firewood consumption, Australia-wide, at 6.1 million tonnes per annum - larger than woodchip exports at 5.9 million tonnes per annum, yet receiving considerably less attention (Graham 1996). Most firewood collection takes place in dry woodlands on private land; these are among the most threatened communities, having borne the brunt of vegetation clearance over the past 150 years (Graham 1996; WWF 1996). Any attempt to protect those communities, and to alleviate the problems caused by habitat destruction generally, would be incomplete without consideration of the impacts of firewood collection and managing those impacts. None of the government policy documents reviewed for this thesis, however, make any reference to attempts to ameliorate the impacts of firewood collection on a national basis (for example the National Biodiversity Strategy [Australia 1996], the State of the Environment Report for Australia [SEAC 1996], the Endangered Species Advisory Council's strategy for the conservation of threatened species [ESAC 1992]). While the Tasmanian State of the Environment Report (SDAC 1996) identifies firewood collection as a threatening process, the Sustainable Development Advisory Council (SDAC) makes no specific recommendations with regard to firewood collection (SDAC 1997).

Threats posed by habitat destruction and fragmentation to biodiversity and the environment generally have been recognised as a major global problem (Blay and Piotrowicz 1993). Responses have been developed internationally, and must be implemented at the national and local levels. International agreements, and Australia's obligations and responses to them, are discussed in the following sections.

2.4 International obligations

2.4.1 General

While they have their problems, such as often being couched in fairly vague language, and containing ambiguous obligations, international agreements can be very useful. They can provide a benchmark against which the performance of governments can be judged, and international peer pressure is a useful means of ensuring that governments fulfill their obligations. In the last few decades, Australia has been a world leader in negotiating and joining international environmental conventions. With these conventions containing increasingly more onerous obligations, Australia's commitment to meeting its obligations in some cases remains to be seen.

Australia is party to the Convention on Biological Diversity 1992 (the Biodiversity Convention) and the United Nations Framework Convention on Climate Change 1992 (the Climate Change Convention), both of which place obligations on member states to protect natural areas, relevant to the protection of biodiversity on private land.

2.4.2 Biodiversity Convention

The Biodiversity Convention was opened for signature on World Environment Day, 5 June 1992, at the Earth Summit in Rio de Janeiro and "provides a framework for global action to conserve and sustainably use biological diversity" (DEST nd). Biological diversity, often described as the "variety of life", is defined by the Convention as "the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems" (Article 2). Australia signed the Convention when it was opened for signature at Rio, and ratified it on 18 June 1993 (DEST nd).

In the preamble, the Convention enshrines the precautionary principle: "Noting also that where there is a threat of significant reduction or loss of biological diversity, lack of full scientific certainty should not be used as a reason for postponing measures to avoid or minimize such a threat". The preamble also notes that the "fundamental requirement for the

conservation of biodiversity is the in-situ conservation of ecosystems and natural habitats and the maintenance and recovery of viable populations of species in their natural surroundings".

Obligations on parties for in situ conservation, including conservation both within and outside formally protected areas, are outlined in Article 8 of the Convention (see figure 2.2). Article 7 obliges parties to "identify processes and categories of activities which have or are likely to have significant adverse impacts on the conservation and sustainable use of biological diversity, and to monitor their effects" (paragraph c), and Article 8(l) further obliges parties who have identified a significant adverse effect on biological diversity to regulate or manage the relevant processes and categories of activities. These are references to what are termed "threatening processes" in threatened species legislation (to be discussed in Chapter 5).

Figure 2.2 ***In situ conservation - Article 8 of the Biodiversity Convention***

Each party is obliged to:

- establish a system of protected areas or areas where special measures need to be taken to conserve biodiversity (protected areas are defined by Article 2 as areas which are designated or regulated and managed to achieve specific conservation objectives);

- regulate or manage biological resources important for the conservation of biodiversity, *whether within or outside protected areas,* with a view to ensuring their conservation and sustainable use;

- promote the protection of ecosystems, natural habitats and the maintenance of viable populations of species in natural surroundings;

- promote environmentally sound and sustainable development in areas adjacent to protected areas;

- rehabilitate and restore degraded ecosystems and promote the recovery of threatened species through devices such as management strategies; and

- develop or maintain necessary legislation and/or other regulatory provisions for the protection of threatened species or populations.

(emphasis added)

Parties are also required to "develop national strategies, plans or programmes for the conservation and sustainable use of biological

diversity ... which shall reflect, inter alia, the measures set out in this Convention relevant to the Contracting Party concerned" (Article 6(a)).

The Convention requires parties to adopt economically and socially sound measures that act as incentives for the conservation and sustainable use of components of biological diversity (Article 11).

2.4.3 Climate Change Convention

The Climate Change Convention[2] was adopted on 9 May 1992 and was opened for signature at the Earth Summit in Rio de Janeiro the following month. The Convention entered into force on 21 March 1994 (IUCC 1994). The objective of the Convention is to stabilise greenhouse gas concentrations in the atmosphere at a level that will prevent dangerous anthropogenic interference with the climate system (Article 2). Australia ratified the Convention on 30 December 1992 (SEAC 1996).

The parties to the Climate Change Convention recognise that as well as controlling emissions of greenhouse gases, it is important to maintain and enhance greenhouse gas "sinks" such as forests and "reservoirs", oceans. Information produced by the United Nations Environment Program (UNEP) Information Unit on Climate Change states that deforestation is the second largest source of carbon dioxide, with carbon dioxide escaping to the atmosphere during burning or decomposition after clearing of forests, and also states that growing forests take carbon dioxide from the atmosphere (UNEP 1997a). Agriculture is also recognised as a major contributor of greenhouse gases (20% globally), with livestock rearing, wet rice cultivation and fertilizer use emitting 50% of human-related methane and 70% of human-related nitrous oxide (IUCC 1997b).

The Climate Change Convention requires parties to develop a greenhouse gas inventory listing its national sources (such as factories and transport) and sinks [Article 4(1)(a)] (UNEP 1995). Parties also undertake to promote sustainable management, conservation and enhancement of greenhouse gas sinks and reservoirs [Article 4(1)(d)] (UNEP 1995).

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[2] 9 May 1992, (1992) ILM 31 849.

Organisation for Economic Co-operation and Development (OECD) members and countries in "transition to market economies", who are listed in Annex 1, are required by the Convention to adopt policies and measures aimed at returning their greenhouse gas emissions to 1990 levels by the year 2000 (Article 4(2)(b)). Australia is listed on Annex 1.

2.5 Australia's responsibilities

2.5.1 General

While the Commonwealth has no specific responsibility for environmental matters under the Constitution, it is now well established (since the Tasmanian Dams Case[3] in 1983) that it has certain Constitutional powers which enable it to legislate for environmental protection, not least of which is the external affairs power. The external affairs power (section 51(xxix) of the Constitution) enables the Commonwealth to conduct Australia's international relations and to legislate to give effect to international obligations, overriding the States if necessary (Tasmanian Dams Case).

Australia's ratification of the Biodiversity Convention and the Climate Change Convention, obliges it at international law to implement the provisions of those Conventions in its domestic legislation (Brownlie 1990). Both of these Conventions could empower the Commonwealth to legislate to ensure retention of native vegetation. The Biodiversity Convention explicitly requires in situ conservation of biodiversity, and requires parties to identify processes that threaten biodiversity and to redress those processes. The Climate Change Convention requires parties to conserve and sustainably manage greenhouse gas sinks, such as forests.

The Commonwealth has other constitutional powers, such as its powers over interstate trade and commerce, and corporations which could also be used to enact environmental legislation (Tasmanian Dams Case). The Commonwealth also has the power under section 96 of the Constitution to give tied grants to the States, by making grants conditional on the States agreeing to undertake certain activities or programs.

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[3] *Commonwealth of Australia v. State of Tasmania* (1983) ALR 625.

The Commonwealth has not used its potentially significant powers to legislate in the area of native vegetation conservation, preferring to work co-operatively with State and local governments, mainly through the provision of program funding. This is consistent with its obligations under the Intergovernmental Agreement on the Environment (IGAE), which was signed by the States, Territories, Local Government and the Commonwealth in February 1992. The IGAE requires the Commonwealth to exercise its powers to enter into international agreements in consultation with the States, and fosters co-operative means of implementing environmental protection obligations. The IGAE was reaffirmed by the Commonwealth, States and local government at the November 1997 Council of Australian Governments meeting, when they gave in principle endorsement for an Agreement on Commonwealth/State Roles and Responsibilities for the Environment (Hill 1998). The most important outcome of this agreement is that the Commonwealth's role will be focussed on matters of national environmental significance, in particular relating to Australia's specific international obligations such as protection of World Heritage properties and migratory birds (Hill 1998). As a result of this redefinition of its responsibilities, the Commonwealth has announced a new package of environmental legislation, to replace current legislation, which will work principally through co-operative arrangements with the State, even where a Commonwealth decision is required (Hill 1998).

To an extent the Commonwealth's reliance on co-operative measures is inconsistent with its obligations under international agreements (Dixon 1994; Farrier 1995b). Australia has certain obligations under international agreements, discussed in section 2.4, which exist whether the Commonwealth plans to implement them through its own legislation or in co-operation with the States. If these obligations are not met, due for instance to State government opposition or delay in implementing programs, Australia is in breach of its international obligations. There is often no specific legal sanction imposed in treaties and conventions against parties which breach their obligations, other than, in extreme cases, expulsion from the agreement. However, non-compliance with an international agreement can result in embarrassment to the government

concerned in the international arena, and if the issue is viewed seriously enough, can lead to diplomatic and economic sanctions (Dixon 1990) .

The Commonwealth's reliance on co-operation with the States and local government is also inconsistent with the urgency with which Commonwealth agencies profess the need to abate threats such as vegetation clearance (Dixon 1994; Farrier 1995b). For example, the State of the Environment Report (SEAC 1996), the National Strategy for the Conservation of Australia's Biological Diversity (Australia 1996) and the Department of the Environment, Sport and Territories' study of native vegetation clearance and biodiversity loss in Australia (DEST 1995) all express the urgent need for measures to stem the loss of native vegetation. The Final Report of the Ecologically Sustainable Development Working Group on Agriculture recommended that State governments strictly apply an authorisation procedure for vegetation clearance with appropriate and rigorously enforced sanctions (Australia 1991). However, in accordance with the IGAE, the Commonwealth will not take urgently needed action of its own accord. If a particular State does not agree that action is warranted, for example to stem native vegetation clearance, the action will not be taken despite the dire warnings contained in Commonwealth documents, and despite the Commonwealth's own legislative powers.

2.5.2 *Biodiversity*

The National Strategy for the Conservation of Australia's Biological Diversity (Australia 1996) recognises the need for conservation of biodiversity on private land given that the threats to biodiversity extend across administrative and tenure boundaries; the IGAE also recognises the need for conservation outside reserves.

One of the objectives of the National Strategy, which recognises clearance of native vegetation as a threatening process, is to "ensure effective measures are in place to retain and manage native vegetation, including controls on clearing" (3.2). To achieve this objective, the Strategy outlines the following actions. By the year 2000, Australia will have:

- arrested and reversed the decline of remnant vegetation; and
- avoided and limited any further broad-scale clearance of native vegetation, consistent with ecologically sustainable management and

bioregional planning, to those instances in which regional biological diversity objectives are not compromised (7.1.1) (Australia 1996).

Tasmania, along with all other States and Territories, is a signatory to the Strategy, which outlines Australia's intended actions to ensure its compliance with the Biodiversity Convention.

To date, judging from the 1996 Australian State of the Environment Report (SAEC 1996), progress towards these goals has been very slow. The State of the Environment Report assesses the adequacy of government reponses to key issues. In the majority of most ecosystems where the key issue is described as habitat destruction, responses are described as inadequate, locally effective only or limited. In the biodiversity section, the responses are generally limited to improved land management and creation of reserves. Legislation is rarely listed as a response to habitat destruction, even though the majority of States have vegetation clearance controls in place, indicating that despite the insistence in documents like the Biodiversity Strategy on the need to prevent further vegetation clearance, Commonwealth agencies are focussing on less regulatory means of protecting biodiversity and habitat.

The Report's summary of responses (in tabular format) indicates that these approaches have not been effective in the majority of areas. For example eucalypt scrubs and shrublands are now extemely fragmented due to clearance and grazing (SEAC 1996). The report describes the responses to this state, reservation and restoration, as very limited and inadequate (SEAC 1996). The response to the widespread loss and fragmentation of heathlands through clearance, altered fire regimes, urbanisation, agriculture and mining has been the creation of reserves. The report describes this response as limited and only locally effective (SEAC 1996). The creation of protected areas as the response to the loss of land plants through clearance and habitat modification is rated as being effective in some areas (SEAC 1996).

The Land Resources chapter has a slightly greater focus on regulatory mechanisms, and their effectiveness where implemented. However, the chapter focusses on the problems caused to agricultural land, rather than

biodiversity, through loss of native vegetation cover. This is indicative of the difference in focus between Commonwealth agencies dealing with land management and biodiversity issues, although problems in both areas have a common origin - the loss of native vegetation. This inconsistency is also evident in the level of funding provided to programs in the areas of habitat protection and revegetation, discussed below.

As will be discussed in Chapter 3, Tasmania is the only State which has not taken the initiate to introduce some form of control on the clearance of native vegetation (SEAC 1996). The government responses listed by the State of the Environment Report do not include any action by the Commonwealth to introduce its own controls where inadequate controls exist, or to require States to introduce or tighten their own controls, despite the apparent inadequacy of most of the other measures listed above, and the success of strict controls where they exist (SEAC 1996). The Commonwealth's review of environment legislation, released for public comment in March 1998, announced a proposed new Biodiversity Conservation Act, which will replace existing Commonwealth nature conservation legislation including the Endangered Species Protection Act 1992, which has been criticised as being too limited a response to obligations under the Biodiversity Convention (Commins 1993; Dixon 1994). The proposal to make a specific Act to implement Australia's obligations under the Convention is therefore welcome, however the proposed structure of the legislation raises some questions about its potential effectiveness in protecting biodiversity. The Commonwealth proposes that the Act will operate principally through co-operative arrangements with the States, including through bilateral agreements, which may accredit State decision-making processes, even where the final decision is a Commonwealth one. As will be discussed in Chapters 3 and 5, some State legislative attempts at biodiversity protection have major flaws.

It is not necessary for the Commonwealth to legislate in order to influence biodiversity conservation; it has significant powers to influence the States through funding arrangements. The great majority of Commonwealth funding for native vegetation programs is allocated to Landcare-type programs, that is, programs aimed at reversing land degradation through activities such as revegetation (Farrier 1995a). The House of

Representatives Standing Committee on Environment, Recreation and the Arts, in its report on the contribution of community groups to the conservation of biodiversity, described the Save the Bush program as the only community-based Commonwealth-funded program directly aimed at protecting biodiversity (HRSCERA 1992). The Committee's report is the only published review of community-based programs. The Committee described the funding level for the program (then $1.5 million and only 3% of the funding for community-based environment programs) as "desultory" (HSCERA 1992:11). The Committee also concluded that continued native vegetation clearance runs counter to the Commonwealth-funded community-based programs, the Decade of Landcare and the maintenance of biodiversity and ecosystem processes. Perhaps as a response to this report, the former Labor government, through its Native Vegetation Initiative increased the allocation for "a cooperative approach to protecting native vegetation at risk from clearing" to $64 million over five years, however this was still much less than the $254 million allocated for revegetation (ANZECC 1996). As will be discussed in Chapter 4, the current Federal Coalition government has greatly increased funding to native vegetation programs under the Natural Heritage Trust. However, since vegetation protection and revegetation programs have been amalgamated under the new Bushcare program, it is not possible to determine whether funding for bushland protection has increased.

The Commonwealth could use its funding powers under section 96 of the Constitution to tie grants for Landcare-type programs to the requirement for vegetation clearance controls to be in place, that is, funding would not be forthcoming for these programs in the absence of clearance controls (Pittock and Nias 1995). Without such a provision, the Commonwealth is in a position where it is providing large amounts of funding for revegetation programs while allowing large areas of vegetation to be cleared, and providing smaller amounts of funding to true native vegetation retention programs (Bradsen 1992; Bennett 1995). The current government's review of the National Greenhouse Strategy found that the "rate of clearing expected to occur over the current five year period (is) ... approximately 2.5 times the proposed rate of revegetation under all programs and private initiatives" (ICESD 1997:27). In other words, the Commonwealth is allocating large amounts of money to ameliorate a

situation which could be prevented by requiring clearance controls. The introduction of native vegetation clearance controls in States without such controls or with inadequate controls, should be required as a precondition to continued Commonwealth funding for revegetation.

2.5.3 Climate Change

The Commonwealth's response to the Climate Change Convention has been more problematic and more controversial than to the Biodiversity Convention. In 1997 Government successfully campaigned internationally to have different greenhouse gas reduction targets applied to countries such as Australia which have a large industrial dependence on fossil fuels (DFAT 1997; 1998). This approach has been widely criticised as short-sighted and counterproductive to Australia's long-term environmental and economic future (for example Pears 1997). Under the Kyoto Protocol to the Climate Change Convention, finalised in December 1997, Australia is required to meet a greenhouse gas emission target of an 8% increase over 1990 emissions, by 2008 - 2012 (DFAT 1998). This compares with emission targets set for the EU, a reduction of 8%, and the US, a reduction of 7%. The Government was especially pleased that the Protocol provides for emission targets to be set by taking into account the full range of greenhouse emissions and sinks (DFAT 1998). The contribution of land clearance to Australia's emissions, which is larger than that for any other Annex I country, was taken into account in setting Australia's target (DFAT 1998). Any future successful efforts to reduce vegetation clearance will therefore be able to count towards Australia's emissions target (Kesby pers. comm. 1998).

The Government's National Greenhouse Response Strategy (Australia 1992a) was released in 1992, following public consultation, and is currently being revised (ICESD 1997; Dee 1998). The Strategy recognises the government's obligation to "conserve and enhance the sink capacity of Australia's natural environment"; the strategy to achieve this end includes vegetation retention controls, forestry management, creation of reserves, reafforestation, rehabilitation and increasing the plantation base. The specific "response action" with regard to private land is to encourage sustainable management of private native forests through a combination of measures that may include information dissemination, education,

conservation incentives, land clearing controls, harvesting practices and codes of forest practice (Australia 1992a).

The Discussion Paper for the review of the National Strategy (ICESD 1997) continues along the same lines as the Strategy itself, however notes the concern of a number of national committees at the continued high rate of native vegetation clearance, which exceeds revegetation efforts.

Measures proposed include the development of an agreed national framework or principles vegetation clearance associated with land use change, with an emphasis on dissemination of information, including on land capability assessment, agricultural sustainability and biodiversity, in order to discourage inappropriate clearing. The Report also proposes the identification of anomalies such as in taxation and funding arrangements, and the investigation of measures such as voluntary title restrictions and conservation agreements (ICESD 1997). These matters have already been identified and investigated a number of times, including by the Australia and New Zealand Environment and Conservation Council (ANZECC) committee and a review sponsored by the Commonwealth Department of Environment, Sport and Territories (ANZECC 1995; Young et al. 1996). In November 1997, before the review of the national strategy has been completed (Dee pers. comm. 1998), the Prime Minister announced a package of measures intended to reduce Australia's greenhouse gas emissions (Howard 1997). These include fostering growth in plantation forestry and native forest regeneration, and a program to treble Australia's plantation estate by the year 2000, through removing impediments to the development of commercial plantations (Howard 1997). The use of previously cleared land for plantations has been emphasised in a number of Commonwealth policy documents, including Australia 1992b and Australia 1995. However the Prime Minister's announcement is more consistent with recent changes to forestry policy (discussed in section 2.5.4 below), as well as the reality of much private forestry practice, with native forests being cleared for plantations (Graham 1996; McGlone 1993; FPB 1995 and 1996).

None of the measures in the greenhouse response strategy, the review of the strategy or the Prime Minister's announcement, involve any

Commonwealth active involvement in, or requirement for, adequate vegetation clearance controls, or even adequate land use planning to ensure conservation on private land. The Prime Minister considers that community-based programs funded under its Natural Heritage Trust adequately fulfil any obligations the Commonwealth has to protect native vegetation (Howard 1997).

2.5.4 Forestry

Like environmental issues in general, the Commonwealth has no specific powers with respect to forestry, with State governments having day to day responsibility. However, it has significant influence and decision-making power, again through its powers over external affairs, exports, corporations, and funding arrangements. The Commonwealth's powers have been a major focus of the Australian forestry debate, since they give the Commonwealth the capacity to vastly change the extent of forestry, particularly through the very contentious issue of export woodchip licences and the declaration of World Heritage Areas (Dargavel 1994; SEAC 1996). In 1996 the Commonwealth and States started to develop Regional Forest Agreements (RFAs), as outlined by the National Forest Policy Statement (Australia 1992b), agreed to in 1992 by the Commonwealth and all States other than Tasmania, which signed in 1995.

Regional Forest Agreements aim to settle the forestry debate in Australia through establishing a "Comprehensive, Adequate and Representative" (CAR) reserve system, codes of practice for ecologically sustainable forestry and a more sound commercial footing for the industry (Australia 1992a; SEAC 1996) (for a detailed history of the forestry debate see Dargavel 1994; for a summary of relevant policy documents see PLUC 1996a). Agreements are intended to last from ten to twenty years and to bring stability to the forestry industry (SEAC 1996).

The reserve system to be established under the RFAs is to include at least 15% of the pre-1750 extent of each forest type in secure reserves, with protection for old growth forests to range from 60% in more extensive forest types to 100% for rare forest types (JANIS 1995). In Tasmania at least some of the forest types which need to be protected to reach the 15% target are now only found on private land, or some areas of forest on private land

will be needed to make up the 15% (PLUC 1996a). In order to identify areas which are to be protected and those which will be available for logging, Comprehensive Regional Assessments (CRAs) have been or are being carried out by all States with a forest industry (PLUC 1996a).

While the CRAs were still being carried out, the new Federal Coalition Government announced in July 1996 that it would be greatly increasing woodchip exports, in particular by introducing case by case consideration of exports of woodchips from "degraded" private land for the establishment of hardwood plantations. An additional one million tonnes of sawmill residues and silvicultural thinnings were allowed to be exported on top of the existing quota (5.2 million tonnes), leaving a space in the quota, which could be filled by further logging of native forests (TWS 1996a; Graham 1996).

With this single policy decision, the Government brought into doubt to a large degree its commitment to protecting biodiversity in situ, including on private land, as required by the Biodiversity Convention and Strategy, to protecting and enhancing carbon sinks, as required by the Climate Change Convention and the Greenhouse Strategy, and to coming to a reasoned solution on conservation of forests and ecologically sustainable forestry. The previous Labor government's Wood and Paper Industry Strategy (Australia 1995) explicitly stated that there should be no clearing of native forests in order to establish plantations.

To date, only two RFAs have been finalised, for Tasmania and East Gippsland in Victoria (Press pers. comm. 1998), in the face of concerted opposition from conservationists who believe that the RFAs have not adequately implemented the aims of the CAR reserve system, and will lead to unrestricted clearfelling of native forests for the woodchip industry (Law 1997). The remaining RFAs, for other areas of Victoria, New South Wales, Queensland and Western Australia, are due to be finalised by the end of 1998 (Press pers. comm. 1998).

2.5.5 State and local government

The Commonwealth's responsibilities under international agreements are usually formulated at a very general level, and are usually left to be

implemented in detail by State and local governments and increasingly the community, which receive funding to varying degrees from the Commonwealth. Many programs for nature conservation on private land have been developed at the State government level, and are operated by either State or local government, or both. A number have also been developed by local government, which generally has powers to make plans for development in municipal areas, and to approve, reject or approve with conditions, many proposed developments in their areas. The capacity of local government to plan for nature conservation is formally constrained by the extent of its powers under State legislation, and informally by the closeness of local government to vested intersts operating in their areas and the need to obtain income through rates (Kelly and Farrier 1996). Legislation and programs at the State and local government level, and community programs, are discussed in detail in later chapters.

2.6 Chapter summary

There is clearly a need in the Australian context for a much greater focus on conservation on private land. Existing formal reserves are not adequate to protect all ecosystem types and processes, with many community types, and threatened species, now only occurring on private land. Even if further formal reserves are declared, it is unlikely that these will be adequate to protect the extent and array of biodiversity and communities currently unprotected. Clearance of native vegetation continues to be a major threat to biodiversity.

Government reponses to threats to biodiversity have varied, with the Commonwealth showing strong leadership by signing and ratifying international agreements. However, the Commonwealth has chosen not to take the path it has used in the past, of using its external affairs power to override State governments in order to ensure that Australia is fulfilling its international environmental obligations, even though its many "strategies" identify legislative solutions to environmental problems, such as native vegetation clearance. Instead, it has chosen to rely on co-operation with the States and local government through the IGAE and with the community through funding voluntary programs. The Commonwealth's State of the Environment Report indicates that, to date,

this approach has had only limited success. As will be seen later, some States have chosen to legislate to regulate vegetation clearance and habitat protection, while Tasmania has chosen a mainly non-regulatory approach, preferring to work co-operatively with landholders.

Chapter 3 examines in detail the situation in Tasmania - the need for nature conservation on private land and the existing legislative and policy framework in which measures may be taken.

Chapter 3 - Clearance and protection of native vegetation in Tasmania

3.1 Native vegetation clearance

3.1.1 Extent of clearance

Tasmania, the smallest Australian State, covers approximately 68,000 square kilometers, or 6.8 million hectares, of which 39%, about 2.7 million hectares, is privately owned (ABS 1998). Tasmania has some of the most spectacular national parks in Australia, covering 1,348,842 hectares, or approximately 20% of the State (ABS 1998). However, with a few notable exceptions such as Freycinet and Mount William National Parks, the vast majority of the land protected by national park status is found in the Tasmanian Wilderness World Heritage Area, which covers 1.37 million hectares in the west and south west of the State (ABS 1998). Much of the remainder of Tasmania, particularly the Midlands and eastern Tasmania, suffers from the problems discussed in Chapter 2, relating to remnant native vegetation and inadequate reservation of communities.

Gilfedder and Kirkpatrick (1995b) consider that in Tasmania land clearance is the single most important threat to remnant vegetation. Land clearance rates in Tasmania averaged 6,000 hectares per annum from 1980-88, and 5,054 hectares per annum from 1988 - 1994, and was concentrated on poorly reserved vegetation types on private land (SDAC 1996; Kirkpatrick and Jenkin 1996). Kirkpatrick (1994) compares the rate at which some types of poorly reserved and threatened forest are being cleared with the annual clearance rate of 1% of the Amazon rainforests. The Tasmanian State of the Environment Report (SDAC 1996) also notes that land clearance is one of the major threats to the maintenance of Tasmania's diverse vegetation, with some forest types reduced almost to extinction by clearing, in particular a number of forest types in the Midlands and other dry areas of the State. Vegetation clearance is carried out for forestry, mining, urban expansion and agriculture, with inundation for hydro-electricity projects also a major contributor to vegetation destruction (SDAC 1996).

Clearing is classed as a threatening process for rainforest, coastal vegetation, wet and dry eucalypt forests, swamp forests, grasslands and grassy woodland (SDAC 1996). The extent of swamp forests has been reduced by

66% due to clearing since European occupation, coastal heathland reduced by 47%, dry forest and woodland by 46%, grassland by 40% and wetlands by 33% (SDAC 1996). Firewood cutting is also classed as a threatening process for dry sclerophyll forest (SDAC 1996). It is paradoxical that even though the majority of clearing has been carried out on private land, usually for agriculture, some species are now almost entirely dependent on fragments of habitat found on private land. This is because there are very few reserves in agricultural areas of Tasmania, due to the traditional approach to conservation in Australia whereby reserves have come from public land areas no-one else wants (SDAC 1996; SEAC 1996).

Fauna species now almost entirely dependent on areas of private land are the forty-spotted pardalote (*Pardalotus quadragintus*) and the swift parrot (*Lathamus discolor*), which require grassy white gum (*Eucalyptus viminalis*) and dry blue gum (*Eucalyptus globulus*) communities respectively (Milford 1997; Jackson and Taylor 1994). While some landholders have been concerned to retain habitat for these birds (Milford 1997), their survival continues to be threatened without formal protection. Reports carried out for the Tasmanian RFA found that *E. viminalis* communities within three kilometres of the coast from Bicheno to Southport are required to be reserved from logging to ensure the survival of the forty-spotted pardalote, and that all of the swift parrot's habitat, in grassy *E. globulus* and *E. globulus - E. pulchella - E. viminalis* communities must also be protected (PLUC 1997; Brereton, Bryant and Rowell 1997). Most of these communities are now found on private land (PLUC 1996b).

Many of Tasmania's rarest plants are found in urban bushland areas, mainly identified in places such as tips, cemeteries and reserves, for example the Queen's Domain in Hobart (SDAC 1996), however increasingly they are being found on private land. The rare and endangered *Eucalyptus morrisbyi* is now only found on one small area of private land on Hobart's eastern shore (PLUC 1996b). Conversion of urban fringe and rural bushland areas to housing subdivisions is one of the greatest threats to native vegetation in Tasmania (SDAC 1996). While there are no Statewide figures available on the extent of bushland lost to suburban expansion, SDAC (1996) gives the examples of Boronia Hill

near Kingston, which has lost 40% of its bushland, the Kelcey Tier area of Devonport's urban bushland, which has been reduced by 20%, and the Dooleys Hill area near Latrobe, where urban bushland has been reduced by 50%. Since 1960, the urban area of Hobart has increased by two and a half times, Launceston three times, and the north-west coast by seven and a half times (DPIF and DELM 1997).

3.1.2 Reservation status of vegetation communities

The majority of unreserved and poorly reserved plant communities in Tasmania are found in agricultural regions, including grasslands and grassy woodlands, dry sclerophyll forest, heath and wetlands, with the majority of these also occurring in the drier parts of the state, where nature reserves are largely absent (Gilfedder and Kirkpatrick 1995a). In the lowland agricultural regions, less than 14% of the original vegetation remains (Gilfedder and Kirkpatrick 1995a). Much of the remaining native vegetation in agricultural areas has been fragmented into almost 9,000 isolated patches of bush ranging in size from less than 1 hectare to 200 hectares, the majority (87%) being less than 1 hectare in area (Gilfedder and Kirkpatrick 1995b). Table 3.1 shows the reservation status of vegetation communities in Tasmania, indicating that the communities most vulnerable to vegetation clearance are the least reserved.

Detailed studies of the reservation status of forest communities in Tasmania, including the extent of forest communities on public and private land, was carried out for the RFA. These studies, which are presented in PLUC (1996b) show that there are many flora species which are now mainly found on private land and are largely unprotected. Some of these communities, such as *Eucalyptus morrisbyi* and *Eucalyptus risdonii*, are endangered species that only occur in a very small area (PLUC 1996b). Many other species are inadequately reserved on public land (PLUC 1996b).

PLUC (1996b) shows that of the 50 communities studied for the RFA, reservation of private land is required to meet the RFA target for 17 communities. Table 3.2 shows details of these communities, giving the area of private land required to meet the RFA targets, their reservation and conservation (for example whether rare or endangered) status. Of these 17 communities, 13 have a threatened status (that is, rare, vulnerable or

endangered), and 11 now occur mainly or only on private land. A further 5 communities, not included in Table 3.2, have significantly more of their remaining coverage on private land than public land, but the RFA reservation targets can be met from public land.

Table 3.1: Reservation status of vegetation communities in Tasmania

Vegetation type (and no. of communities)	Well-reserved (%)	Poorly reserved (%)	Unreserved (%)
Alpine (43)	98	2	0
Sphagnum peatland (8)	88	12	0
Rainforest (39)	82	8	10
Buttongrass moorland (31)	81	13	6
Coastal (51)	80	10	10
Wet eucalypt forest (66)	71	17	12
Heath (38)	61	32	8
Dry eucalypt forest (41)	58	33	9
Wetlands (54)	44	14	42
Swamp and other forest (37)	39	27	35
Grasslands and grassy woodland (39)	28	49	23
All communities (447)	64	21	16

Sources: SDAC 1996; Kirkpatrick et al. 1995

Note: some of the totals are more than 100% due to rounding.

Most of the studies of reservation and conservation status carried out for the RFA were desktop reviews of existing data (PLUC 1996a; McQuillan pers. comm. 1997). The Tasmanian Conservation Trust pointed out that the databases used for the studies were likely to contain five per cent or less of Tasmania's biota, and that no comprehensive analysis of the number of organisms at risk of extinction due to development, particularly land clearance, was carried out (TCT 1996b). It is likely therefore that the reservation requirements outlined in the PLUC reports are an underestimate of that required to protect biodiversity in Tasmania's forests.

Table 3.2 Forest communities where private land is required to be reserved to meet RFA targets - Tasmania

Community	Current area (ha)	Pre-1750 area (ha)	Area reserved*	Other public land(ha)	Private land (ha)	Private land needed (ha)	Threatened?
E. amygdalina inland	25,800	76,900	1,400	1,810	22,590	12,270	V1
E amygdalina on sandstone	30,110	114,300	1,810	10,670	17,630	5,590	V1
Grassy *E. globulus*	14,450	28,500	4,230	2,380	7,840	2,060	V2
E. viminalis grassy	112,490	242,900	1,450	2,750	108,280	32,230	no
E viminalis ‡ *E globulus* coastal	1,220	4,700	280	20	910	430	R3, V1
Inland *E. tenuiramis*	55,010	123,800	3,260	5,000	46,760	24,750	V2
Furneaux *E viminalis*	140	200	0	120	20	20	R1, R2, R3
Shrubby *E ovata*	7,210	232,000	270	360	6,580	6,580	no
E. rodwayi	8,670	11,900	280	350	8,040	1,160	no
E. risdonii	370	500	170	10	200	50	R1, R2, R3
E. morrisbyi	20	250	0	0	20	20	R1, R2, R3, E2
E. brookeriana	4,560	13,500	75,080	2,050	2,240	420	V1
King Is *E. globulus-E. brookeriana-E. viminalis*	2,420	58,300	130	540	1,760	1,760	R3, E2
E viminalis wet	4,180	78,100	320	1,000	2,860	2,860	E3
Notelaea ligustrina/Pomaderris apetala	290	300	190	60	40	40	R2, R3, E3
Banksia serrata woodlands	160	200	120	0	40	40	R2, R3, E3
Melaleuca ericifolia	600	19,600	220	180	200	200	R2, E2
Coastal swamp forest							

Source: PLUC 1996b

Note: PLUC (1996b) contained some errors in calculation, which have been repeated here as the correct figures are not known.

Explanations: ± with the presence or absence of; R = Rare; E = endangered; V = vulnerable; 1 = known from type collection only; 2 = geographic range < 100 km; 3 = geographic range > 100 km

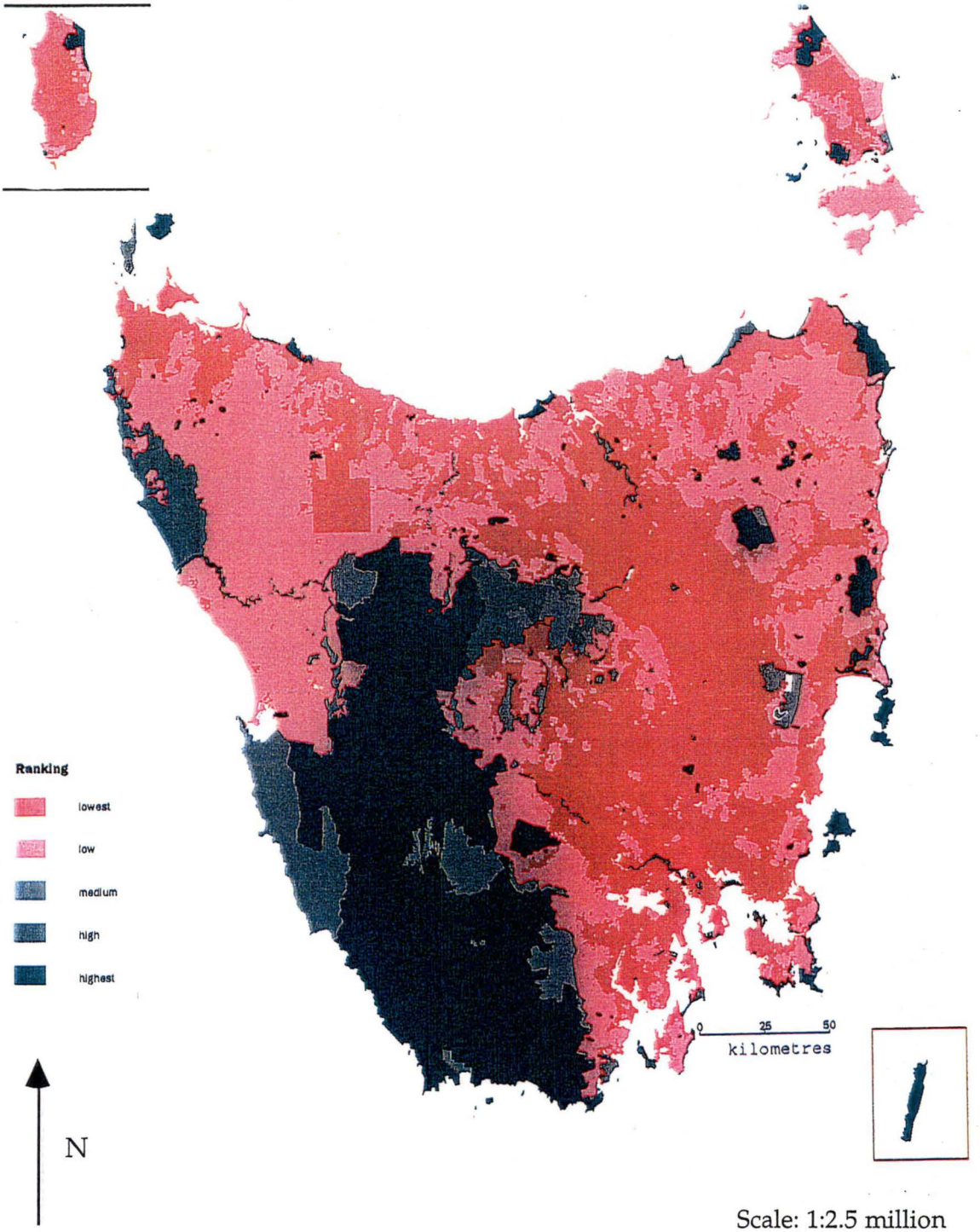
3.1.3 Land tenure and landcover change

Figure 3.1 shows the degree of protection offered by land tenure against future landcover change (vegetation disturbance). The figure graphically shows that in eastern and northern Tasmania there are few reserves and that the majority of the State has land tenure which offers either lowest or low protection against landcover change. The "lowest" category includes all private land, and no public land is included in this category (Wells 1997).

Tasmania has 3 million hectares of forested land, almost one-third of which (848,000 hectares) is on freehold land (PLUC 1996a). About 10% of this privately-owned forested land is owned by industrial companies, North Ltd, Boral and Australian Newsprint Mills, and the remaining 90% by non-industrial entities (PLUC 1996a, 1996c). Many private non-industrial landowners have entered into legally binding agreements with industrial companies such as North and Boral to harvest their forests (PLUC 1996a; PFT 1996).

North Ltd owns a block of approximately 108,000 hectares at Surrey Hills near Hampshire, south west of Burnie (Walker pers. comm. 1996; Fisk pers. comm. 1996). North is aiming to convert over 50,000 hectares of this land, which consists of rainforest, eucalypt forest, woodland and grasslands, to eucalypt plantation, with the cleared native forest being converted to woodchips at the nearby Hampshire woodchip mill (Walker pers. comm. 1996; Fisk pers. comm. 1996; McGlone 1993). While North is setting aside approximately 10% of the land in a reserve system, much of the land reserved has scenic and cultural heritage value, rather than value for nature conservation (McGlone 1993). Large areas of grassland and woodland have been cleared for plantation establishment (McGlone 1993). The grasslands include some rare and threatened communities, and are home to the endangered Ptunarra Brown Butterfly (*Oreixenica ptunarra*) which is threatened by plantation establishment (Neyland 1992). The new Threatened Species Unit in the Parks and Wildlife Service has encouraged North to set aside further areas to protect the butterfly on their land (Bell 1997a, 1997b).

Figure 3.1: Degree of protection from landcover change (vegetation disturbance) offered by different land tenures in Tasmania



Scale: 1:2.5 million

Source: SDAC 1996; Map courtesy of the State of the Environment Unit, Department of Environment and Land Management, Hobart.

Note: White areas are Crown land where institutional arrangements caused uncertainties over the degree of protection provided (Wells, A, pers. comm. 1997).

Even land owned by the most conservation-minded private landholder is not protected in the long term from adverse landcover changes, without some kind of formalised protection. Recent surveys of landholder intentions show that despite a reasonable commitment to protecting the nature conservation values of their land among many farmers in Tasmania, large areas are still threatened by clearing (Greening Australia 1993; Gilfedder and Kirkpatrick 1995b).

In 1992, Greening Australia carried out a survey of Midlands farmers' attitudes and intentions towards native vegetation (Greening Australia 1993). The survey found that the majority of farmers believed that native vegetation either had benefits for their property or that the advantages of having native vegetation outweighed the disadvantages. However, it also found that 65 farmers, approximately a quarter of the number of respondents, intended clearing 8,793 hectares over the next ten years.

Gilfedder and Kirkpatrick (1995b), in their study of the intentions of owners and managers of remnant lowland native grassland in Tasmania, identified the potential for a change in landowner, and in landowner intention, as the greatest threat to the remaining native grasslands in Tasmania. They found that while the majority of graziers valued their native grasslands, there is a significant proportion who do not consider the areas to be of high value and could change the current land use in the future, particularly if there are economic pressures to do so. Gilfedder and Kirkpatrick noted with alarm that the intended clearing found by Greening Australia (1993), almost 9,000 hectares, represented the intentions of only 65 landholders.

A study estimating potential yield from private native forests for the RFA estimated that 60% of private forested land was intended to be logged by its owners, including a discount of 13.5% to account for areas which cannot be logged for environmental reasons, such as streamside reserves (PLUC 1996c). This figure did not include the intentions of industrial forest owners or land dedicated in private timber reserves (PLUC 1996c). Based on this figure, a rough estimate of the area of private forested land intended to be logged is therefore 315,480 hectares, however none of the reports give a time frame for the intentions of owners to log their land. Added to this,

the land owned by industrial companies, and the land included in Private timber reserves, which are set aside for logging in the future, amounts to some 322,200 hectares (PLUC 1996a; FPB 1997). Following aerial photography to determine the size of Tasmania's private forest estate during 1995-96, carried out by Private Forests Tasmania, industrial forestry companies have been approaching owners of private forested land requesting that the landowner enter into an agreement with the company to log the forest (Pryor, pers. comm. 1997; O'Sullivan, pers. comm. 1997).

The extent to which Tasmania's native vegetation cover has been modified by clearance and forestry, the extent to which many communities are under-represented in the formal reserve system, and the extent to which the threat of clearance still remains, indicate that there is a serious need for protection of native vegetation on private land in Tasmania. The following section demonstrates, however, that this need is currently not being adequately fulfilled through any formal, regulatory mechanisms. As Gilfedder and Kirkpatrick (1995a and 1995b) point out, without formal protection, no land is protected from adverse land use changes in the long term.

3.2 Regulatory framework for nature conservation on private land in Tasmania

There is no clear regulatory framework in Tasmania for ensuring nature conservation on private land. Various pieces of legislation contribute in varying degrees to a very haphazard and inadequate regulatory situation. The existing regulatory framework comes from the land use planning and State policies legislation, environmental management and pollution control legislation (all of which form part of the Tasmanian Resource Management and Planning System), the forest practices legislation, national parks and threatened species legislation. This legislation has been inadequate to date to stem native vegetation clearance on private land or to ensure a viable system of nature conservation on private land (Gilfedder and Kirkpatrick 1995a; SDAC 1996).

3.2.1 Clearance of native vegetation and private forestry

Tasmania does not have any specific legislation regulating vegetation clearance on private land. The Forest Practices Act 1985 applies to private as well as public land and aims to prevent land and water degradation and significant habitat destruction through forestry operations. Streamside areas of varying widths and steep slopes are required to be reserved from logging. However the Act only operates to protect areas of private land while they are subject to commercial logging - the Act provides no protection for land that is being cleared without being subject to timber harvesting requirements, for example for agriculture or firewood. Even where land is subject to commercial timber harvesting, the controls are only in place as long as the timber operation is in process; this has meant that although for example streamside reserves have been left during logging on private land, when logging has finished landholders have frequently bulldozed the streamside reserves in order to completely clear the land for other purposes (Penman 1993; Wells 1996; FPB 1995; 1996; 1997). With no other legislative controls to prevent this residual clearing, the purpose of leaving the streamside reserves is effectively negated (Penman 1993). As will be discussed later (Chapter 5), it is open to local government to place controls on clearing these areas, some councils are starting to introduce clearing controls into their planning schemes.

Timber Harvesting Plans (THPs) are required by the Forest Practices Act to be completed and approved before any commercial harvesting may be carried out on public or private land. Most provisions of the Forest Practices Code (adopted under the Forest Practices Act), including streamside buffer strips to protect water quality, and protection of rare and threatened species, apply to forestry on private land, and must be considered in completing a THP (FC 1993). One notable exception is the landscape management system. All harvesting of State forests must comply with requirements which attempt to limit the visual impact of harvesting, however these provisions are optional for private forest harvesting, often causing major visual intrusions into forested hilly landscapes (FC 1993; SDAC 1996). SDAC reports that many private landholders do not accept, and in some cases do not understand, the concept of visual management, and refuse to incur extra costs by taking visual values into account without the community paying (SDAC 1996).

While it was noted in the Interim Forest Agreement (the precursor to the Regional Forest Agreement) that THPs required by the Forest Practices Act and Code could be used to ensure protection of areas of particular conservation value on private forested land (PLUC 1996a), the legislation as it currently stands is inadequate to guarantee protection. There is no requirement in the Act or Code for independent assessment of natural values, including the presence of threatened species, and the final decision on a THP generally has no input from a nature conservation agency; the exception is where the presence of a threatened species has been notified in a THP, discussed in section 3.2.2 below. Forest Practices Officers appointed by large forestry companies approve the companies' own THPs, under authorisation from the Act and the Forest Practices Board (FPB 1995; 1996; 1997). There is a potential for a conflict of interest where protection of nature conservation values via a THP is not in the company's economic interests. The Act provides for appeals to the Forest Practices Tribunal for applicants and persons with an approved plan which is revoked, however there are no provisions for objections or appeal by other "interested persons", which, combined with the lack of independent assessment, means that large private forestry companies such as Boral and North regulate their own harvesting practices.

The Forest Practices Unit (FPU), which administers the Forest Practices Act is severely understaffed. The Unit, for example, has only one zoologist responsible for determining whether any threatened fauna species are present on a proposed logging coupe, meaning that very few areas are ever physically surveyed (McQuillan pers. comm., 1997; FPB 1997). In 1994-95, only 9 pre-logging surveys were carried out by the FPU zoologist and 25 by the botanist - this figure is for both State forest and private land (FPB 1995). When compared with the number of THPs approved, 470 for logging on private property (FPB 1995), this is a very small number of logged areas professionally surveyed to determine impacts on fauna and flora. While there were an estimated 987 visits to private property by Forest Practices Officers to monitor compliance with THPs and the Forest Practices Code, the vast majority of these were visits by company or consultant Forest Practices Officers. The Chief Forest Practices Officer (of the FPU) made only 10 visits to private logging operations and the Forest Practices Inspector and

two Forest Practices Officers employed by Private Forests Tasmania only made a total of 56 visits. Equivalent figures are not available for 1995-96 and 1996-97. However, the 1996-97 Annual Report advises that 405 THPs were prepared for logging of private forests, and 307 for State forests; about 100 logging operations were field inspected by FPU staff in relation to botanical values, with logging excluded from about 40 of them, and management prescriptions provided in respect of several others. No break-up between State and private forests is provided. Advice (not necessarily a field inspection) was provided in respect of 33 areas of private land (FPB 1997). A small number of inspections were carried out in respect of threatened fauna on private land. The numbers of inspections are still small in comparison to the number of THPs prepared.

The sanction of removal of their warrant to operate applies to Forest Practices Officers. In 1994-95 and 1995-96, this sanction was only applied for not attending training courses (FPB 1995, 1996). However, the 1996-97 Annual Report indicates a change in focus to failures with respect to THPs and breaches of the Act. Four officers had their warrants of operation suspended for periods of one or three months, and five were given a formal warning, for supervising and/or approving flawed THPs; another officer was placed on probation for 12 months for failing to report an apparent breach of the Forest Practices Act (FPB 1997). The Report does not indicate the type of flaws in the THPs or breach of the Act.

The Forest Practices Board Annual Reports so far have concluded that the system of self-regulation in the forest industry is working well, as far as compliance with the requirements of the Forest Practices Code is concerned. However, they also comment that independent operators on private property and private non-industrial landowners have a much lower standard than other operators, that is Forestry Tasmania and the large industrial companies, and also receive little or no training in correct forest practices (FPB 1995; 1996; 1997). Figures in the reports on compliance and enforcement are interesting. While commenting that self-regulation is working well, the 1995 and 1996 figures reveal that the only infringement notices issued to operators or prosecution action taken were the result of public complaints. That is, the Forest Practices Officers themselves either failed to notice, or to take any enforcement action

against, operations in contravention of the legislation and Code. While contraventions of the Code may be dealt with informally, this action does not provide the public accountability and deterrence value of infringement notices under the Act. The Forest Practices Board has expressed some concern that one of the companies has been using its own system of enforcement, rather than that provided by the Forest Practices Act (FPB 1996). The figures in the 1996-97 Report (FPB 1997) are unclear, however they also indicate that the majority, if not all, notices issued under the Act were the result of complaints from adjoining landowners, the public, local government and industry. The Annual Report states that all 140 complaints received were investigated (FPB 1997). While the number of complaints is not broken down between State and private forests, the majority of breaches were found, and action taken, in respect of private independent operators. Legal action was taken or commenced in respect of six logging operations, all of which resulted from external complaints about operations on private property (FPB 1997). The Wilderness Society has commented that "There is intense frustration generated when reports to the Forest Practices Board are brushed aside, when those prosecuted are subsequently let off their charges, and when Forestry officers deny breaches of the code" (TWS 1996b:2), indicating a substantial difference between the perceptions of conservationists and of the Board with regard to enforcement actions. It is clear from the Annual Reports, however, that if it were not for the vigilance of members of the public, little formal enforcement action would be taken.

Public perceptions of a lack of independence from industry of forestry regulatory bodies were noted in the report of the "Independent Expert Advisory Group" (IEAG) review of ecologically sustainable forestry management, carried out for the RFA (IEAG 1997). The report notes that the majority of the Forest Practices Board's costs are paid by Forestry Tasmania and the forest industry. The Board's 1996-97 Annual Report advises that the industry (Forestry Tasmania and members of the Forest Industries Association of Tasmania [FIAT]) pay for the FPU's services to the industry, mainly consisting of research and advice. These costs amounted to $688,000, and accounted for approximately 70% of the Board's total budget. Parliament provided $189,000 towards the Board's enforcement and compliance monitoring functions; Private Forests Tasmania provided

a further $70,000 to the Board. These figures indicate that the enforcement and compliance monitoring functions of the Board are not considered as important as its advisory and research role, and support the reliance of the Board on self-regulation by the industry.

The IEAG report also comments that the Forest Practices Board is an independent body, however three of its four members are employed by Forestry Tasmania or Private Forests Tasmania, while four out of the seven members of the Forest Practices Advisory Council, which advises the Board, represent the industry, Forestry Tasmania or Private Forests Tasmania (FPB 1997). The IEAG concluded that the Government should review current legislation related to Forestry Tasmania, Private Forests Tasmania and the Forest Practices Board "with a view to clarifying relationships, maintaining public transparency, avoiding perceptions of conflict of interest, and improving the efficiency of forest management" (IEAG 1997:x).

The IEAG's general conclusion was that the current Tasmanian forestry environmental management system "meets many of the expectations of a system designed to achieve ecologically sustainable management" (IEAG 1997:x). It also commented that the Forest Practices Code is "a most effective vehicle for ensuring that appropriate standards are implemented and, over time, for improving the general standard of forest management" (IEAG 1997:121), and the combination of the Forest Practices Act and related environmental legislation "provides an adequate framework for environmental assessment of forestry operations" (IEAG 1997:19). These conclusions are not supported by the majority of submissions to the inquiry, which made various criticisms of the Code and the Act and the way forestry is conducted in Tasmania, for example that its provisions with respect to clearfelling on steep slopes, and protecting streams from disturbance during logging and from pesticide and herbicide application, are inadequate (Submissions 1996). These concerns were also made during the public consultation phase for the draft State Policy on Water Quality Management (SDAC 1997a). In addition, 65% of respondents to a survey carried out for the social and economic assessment for the Tasmanian RFA considered that better laws are needed to protect native forests (PLUC 1996d). The Tasmanian Conservation Trust's submission to the IEAG

inquiry doubted the independence of the group, since its Chair had just been paid by Foresty Tasmania to undertake a similar review, which praised the sustainable forestry management undertaken by the corporation (TCT 1996b).

The IEAG confined itself to examining the workings of Tasmania's forestry management systems on paper by examining the strategic planning and administrative framework, rather than forestry "on the ground". It was disappointing to many who wrote submissions that the IEAG did not look outside the current economic framework for forestry in Tasmania, an industry dominated by large corporations (including Forestry Tasmania) clearfelling large areas of native forests and establishing plantations, to look at forestry systems that work much more within an ecosystem framework (Submissions, 1996). While the IEAG notes with concern the contribution of land, including forest, clearance to carbon loss, and the potential for loss of biodiversity, it makes no recommendation for control of vegetation clearance, merely stating that the situation should be monitored.

Most of the IEAG's recommendations relate to planning processes within Forestry Tasmania and the Parks and Wildlife Service; few recommendations related to private forestry. In fact the IEAG considered that, apart from a review of the THP process to ensure that requirements for regeneration are able to be monitored, and improvements to the threatened species legislation, private forestry is adequately regulated under the current system. The IEAG notes that the current woodchip export licencing requirements link licences to adherence to the Forest Practices Code, which is a powerful incentive for compliance. However, one of the objectives of the RFA is the removal of woodchip export licencing (Graham 1996), meaning that the sanction of having export licences cancelled for non-compliance with the Forest Practices Code will no longer be available.

The IEAG considered that while the clearing of public land for the establishment of plantations should be subject to an assessment of non-wood values to ensure that clearing would not jeopardise regional conservation, total catchment management or natural and cultural heritage objectives, these considerations should not be applied to forestry on private land. This comment by the IEAG either betrays an ignorance of

these broader planning systems, or its understanding of them has been overwhelmed by its view of the sanctity of private property. Exempting private land would be counter-productive to any form of planning at the landscape, ecosystem or catchment level (bioregional planning). The IEAG notes that currently assessment and protection processes for biodiversity conservation on private land are inadequate, and that integrated regional planning for biodiversity conservation across tenures will ameliorate this situation. It does not, however, suggest any new or different means for actually ensuring biodiversity conservation on private land.

Comino (1991) and Gunningham (1995) argue that essential elements of any environmental law are accountability of decision makers to the public, public participation in decision making and availability of information to the public to enable them to meaningfully participate. All of these elements are absent in the forest practices legislation.

With the industry-dominated composition of the Forest Practices Board, and its funding from the industry and Forestry Tasmania, any assessment of self-regulation as a satisfactory way to ensure protection of conservation values on land to be logged must be accompanied by a suspicion of bias. With its responsibility for ensuring ecologically sustainable forest practices throughout the forestry industry, the Forest Practices Board should be made up of truly independent experts, without industry representation or funding, and it should receive a much greater Parliamentary allocation for enforcement and monitoring.

Decisions on logging are made by private forestry companies themselves, in the great majority of cases without participation by government departments, and with no possibility of participation or review by the public. There is no independent analysis, and no opportunity for the public to have a say in the protection of threatened species, discussed in section 3.2.2, or in the future of areas declared Private timber reserves, discussed in section 3.2.3.

3.2.2 *Threatened Species Protection*

Like other aspects of the legislation governing conservation on private land in Tasmania, legislation concerning protection of threatened species is

confusing and inadequate. Provisions concerning protection of threatened species are found in the Threatened Species Act 1995, the Forest Practices Code, which is enforceable under the Forest Practices Act, and the National Parks and Wildlife Act 1970.

The Threatened Species Protection Act (TSPA) will be considered in more detail in Chapter 5, where it is compared with species protection legislation in other jurisdictions, however the general scheme of the various pieces of legislation is noted here. Prior to the enactment of the TSPA, the only substantive provisions relating to threatened species were contained in the Forest Practices Code, and these continue to exist alongside the TSPA. The Code provides that a THP must note the presence of any threatened species, by checking the location against a database maintained by the Parks and Wildlife Service and Forest Practices manuals; the Forest Practices Officer then consults with the Chief Forest Practices Officer and the Parks and Wildlife Service. If the species is adequately reserved on Crown land harvesting may go ahead; if not, the matter is handled under the National Parks and Wildlife Act compensation provisions, discussed below (FC 1993).

The FPU has prepared detailed manuals on flora conservation and threatened fauna (Duncan 1991; Jackson and Taylor 1994). The botany manual for Nature Conservation Region 7 (the east coast and Midlands) contains detailed descriptions of the types of flora communities which require conservation, and provides that the Forest Practices Unit botanist should be notified if any of these communities are found during a pre-logging survey, so that protection or management prescriptions can be devised (Duncan 1991). Botany manuals have also been prepared for the Southern Forests, West Coast, North and Northern Midlands (FPB 1997). Similarly, the Threatened Fauna Manual gives detailed map locations for threatened fauna, and general descriptions of habitat and management requirements, and states that the Forest Practices Unit zoologist should be notified if logging is proposed on a site where a threatened species is likely to exist (Jackson and Taylor 1994). In both cases, the manual indicates no adverse consequences for a landowner who may intend to log an area containing a threatened species, and a disincentive to notify is that the

manuals state that it may take some time before the matter is resolved once notification is received. Compensation is not discussed.

Approximately 420 notifications of threatened fauna were received by the FPU in 1996-97, mainly in respect of the wedge-tailed eagle (*Aquila audax fleayi*) and the giant freshwater crayfish (*Astacopsis gouldi*), and dealt with by the FPU in consultation with the Parks and Wildlife Service (FPB 1997). Inspections by FPU staff were carried out in respect of at least twelve notifications of threatened fauna on private land, and fourteen were carried out in State forests. The numbers of inspections are small in comparison to the number of notifications received, however as shown in Table 3.3 some form of action was taken in respect of the majority of notifications. The action taken suggests that, as required by the Forest Practices Code, the FPU is placing greater emphasis on protecting threatened fauna in State forests than on private land. However, as discussed in the examination of the Threatened Species Protection Act in Chapter 5, it is an offence to "take" a listed threatened species. Whether this includes destroying the habitat of a threatened fauna species has not been tested in Tasmania, however in NSW, a decision with respect to a similar provision in the National Parks and Wildlife Act found that destroying the habitat of a protected species was prohibited[4]. The "taking" provision in Tasmania should clearly apply to the harvesting of listed threatened plants.

Table 3.3 Results of notifications of threatened fauna to Forest Practices Unit, 1996-97

	Logging excluded in part or all of coupe	Management recommendations given	No changes required to operation
Private forest	53%	78%	22%
State forest	69%	93%	7%

Source: Forest Practices Board Annual Report 1996-97.

Figures are not available for threatened flora species, or communities, however threatened flora communities are covered by the botanical

[4] *Corkill v. Forestry Commission (NSW)* (1991) 73 LGRA 126 ("the Chaelundi case").

manuals and inspection procedures. Numbers of inspections and advice provided on botanical issues were discussed in section 3.2.1 above.

With no independent checking of THPs to determine whether a threatened species may be affected, it is difficult to see what checks are in place to determine whether all instances are being notified. The Forest Practices Board requires an annual random survey of fifteen per cent of the plans and operations to be carried out by its own authorised Forest Practices Officers each year. Protection of flora and fauna has not been a priority in these surveys until very recently (FPB 1996). The 1996-97 annual random survey found that the fauna and flora protection provisions of the Forest Practices Code were "well implemented" in all cases, slightly less well on private land than in State forests (FPB 1997). Whether the provisions of the Code are adequate is beyond the scope of this thesis, however it has been pointed out that in order to be effective in protecting biodiversity, the Forest Practices Code must be part of a strategic approach to biodiversity protection, which is not currently the case (TCT 1996b).

The only sanction against non-notification of a threatened species under the Code applies to Forest Practices Officers, who in theory could lose their warrant to operate for failure to notify the existence of a threatened species. The report of disciplinary action taken in 1996-97 by the Forest Practices Board (FPB 1997) does not advise whether threatened species were involved in any of the cases, however the circumstances in which disciplinary action was taken indicates that this threat is becoming a more meaningful sanction than in previous years (see section 3.2.1 above). The TSPA contains no obligation to notify the presence of a threatened species. The Act has a number of weaknesses in its provisions relating to private land. These will be discussed in detail in Chapter 5, however the end result is that most of the measures to protect threatened species on private land can only be undertaken with the agreement of the landholder (IEAG 1997).

Amendments to the National Parks and Wildlife Act (NPWA) in 1991 provide for the payment of compensation and the making of conservation covenants over land in respect of which a THP has been modified or amended in order to protect a threatened species. These provisions only apply in the case of threatened species, and not other conservation values,

an omission which has been objected to by some private landholders (FPB 1996; 1997). The provisions are also defective in that, where the landholder and the Minister for Parks and Wildlife cannot agree on the level of compensation, the original THP must be approved without amendment, and with no requirement to protect threatened species. Currently there are two applications being processed under these provisions (Brown pers. comm. 1998). The outcomes of these cases are dependent on the outcomes of the RFA process concerning conservation on private forested land; although the RFA has been finalised, and $30 million has been allocated to conservation of private forested land in Tasmania, the administrative procedures for allocating the money and determining which land is to be protected have yet to be established (Brown pers. comm. 1998). It is not clear whether cases under the National Parks and Wildlife Act will be included within the funding arrangements under the RFA, since the RFA mainly applies to forest communities while the NPWA provisions only apply to individual species (Brown pers. comm. 1997). Conservation covenants may also be entered into voluntarily under the Act. Conservation covenants and other agreements are discussed in Chapter 4.

Clearly a large number of notifications of the presence of threatened species under the Forest Practices Code are made by Forest Practices Officers and private landholders, and these result in advice and decision-making by the FPU, Forest Practices Board and Parks and Wildlife. However, the lack of independent checking of THPs raises a suspicion that not all instances of threatened species are being notified under this system. Combined with the current lack of financial incentives for notifying the existence of threatened species, it is quite likely that the existence of some rare and threatened communities and species are going unnoticed in the preparation of THPs for private land. As noted in section 3.2.1, the forest practices system must be reformed to ensure independent approval and supervision of THPs.

There is a potential for some conflict between the provisions of the TSPA and the Forest Practices Code, however in general the provisions of the Act with respect to private land are fairly weak. The Act is discussed in greater detail in Chapter 5.

3.2.3 *Private timber reserves*

Private timber reserves (PTRs) may be declared by the Forest Practices Board under the Forest Practices Act. A PTR is an area of land set aside for the purpose of growing and harvesting timber under the provisions of the Forest Practices Act and Code (PLUC 1996a). The Forest Practices Board, through its delegate Private Forests Tasmania (previously a section of Forestry Tasmania), considers applications for land to be declared Private timber reserves; objections to the declaration of a PTR may be submitted by a local government authority with jurisdiction over the land, a State authority, or a person with an equitable or legal interest in the land. That is, a person with neighbouring land may not object, nor may anyone else with an interest in the protection of the conservation values of the land. An application may be rejected by the Forest Practices Board on the grounds that the land is not suitable for declaration as a PTR, persons with an interest in the land may be disadvantaged by the declaration, the owner is prohibited by any Act from growing or harvesting timber on the land, or because it would not be in the public interest to grant the application. Applicants and objectors have the right of appeal to the Forest Practices Tribunal established under the Forest Practices Act. Table 3.4 shows PTRs granted since 1994, and a progressive total which includes applications granted since the Act commenced in 1985, noting a large increase in applications and approvals in 1996-97.

Table 3.4 Private timber reserves granted in Tasmania: 1994-1997

PTRs	1994-95*	1995-96*	1996-97	Progressive total since 1985
No. of applications	76	91	166	745
No. revoked	-	6	2	8
No. gazetted	34	76	172	551
Area gazetted (ha)	6,388	39,186	39,365	237,361

* These figures may be inaccurate, since the 1996-97 Annual Report amended the cumulative totals to 30 June 1996.

Sources: PTF 1995; 1996; FPB 1997.

The Board (or Private Forests Tasmania) is required by the Forest Practices Act to consult with the relevant local government body before granting an application. Councils are becoming increasingly concerned that PTRs are being used as a means of "getting around" planning restrictions, since an area declared a PTR is exempt from the requirements of the relevant planning scheme under section 20(7) of the Land Use Planning and Approvals Act (LUPAA). Actions taken recently by councils include the draft Break O'Day planning scheme which requires that THPs be submitted to Council for approval of non-harvesting activities (Graham 1997) and the lodging of six appeals by Meander Valley and Break O'Day Councils during 1996-97 against decisions of the Board to grant PTR applications, over the councils' objections (FPB 1997). The Tribunal dismissed all but one of these appeals. The Meander Valley Council has since appealed to the Supreme Court against a later decision of the Tribunal[5] (Wilkinson pers. comm. 1998).

The Tasmanian Conservation Trusts' submission to the IEAG inquiry noted that "the current exemption of PTRs [and Marine Farms] from the State's otherwise comprehensive planning system is a glaring anomaly which the IEAG should be recommending be removed as soon as possible" (TCT 1996b:13). The Trust notes a particularly severe consequence of the exemption of these "reserves" from the planning system when the Break O'Day Council found itself powerless to intervene to ensure the provision of clean drinking water for its constituents when herbicide was being applied in the town's water supply catchment (TCT 1996b). The IEAG made no recommendation affecting PTRs. A comment by the Forest Practices Tribunal in one of the Break O'Day cases demonstrates a lack of understanding of both the role of land use planning and the importance of planning across whole landscapes. The Tribunal commented that matters of concern to the Council and neighbouring landholders, such as water quality, visual amenity, tourism, the use of chemicals, and the protection of endangered species, are more appropriately considered at the time of preparation of a THP, rather than "many years in advance", as they would be if the subject of the land use planning system (FPB 1997).

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[5] Between Meander Valley Council and Forest Practices Board, forest Practices Board Tribunal, Private timber reserve - Application No. AND 850, 10 November 1997.

The current Supreme Court appeal by Meander Valley Council raises the issue of whether a decision by the Forest Practices Board to grant a PTR application must conform with a planning scheme, made under the authority of the LUPAA. The Forest Practices Act provides that a decision to grant a PTR must not conflict with another Act; the Council's assertion is that the planning scheme was made under an Act and therefore prevails over an inconsistent PTR decision (Wilkinson pers. comm. 1998). A decision by the Supreme Court in favour of Meander Valley Council would mean that the general planning system under LUPAA has precedence over decisions on PTRs made under the Forest Practices Act. Even if the Council is successful, both the Forest Practices Act and the LUPAA should be amended to give clear powers to local government to plan for conservation across whole landscapes or catchments. [See Postscript for a discussion of the findings of the Supreme Court].

Neither the public nor local government have any input to the final decision on a PTR. This contrasts with the general planning system, the Resource Management and Planning System, which applies to most private land. Decisions are made by local government officers and a statutory authority, the Resource Planning and Development Commission (formerly the Land Use Planning Review Panel), with opportunity for public input and appeal at several stages.

3.2.4 The Tasmanian Resource Management and Planning System

The Tasmanian Resource Management and Planning System (RMPS) is a series of Acts designed to modernise the land use planning and environmental management system of Tasmania. Most of the legislation became operative during 1993, and has been hailed as a significant advancement (TCT 1996b; Davis 1996; Edwards 1997). As well as a new Local Government Act which broadly describes the functions of local government with an emphasis on strategic planning for sustainable development, the legislation includes the Land Use Planning and Approvals Act 1993 (LUPAA), Resource Management and Planning Appeals Act 1993 which establishes the Resource Management and Planning Tribunal (RMPAT), the Environmental Management and Pollution Control Act 1994 (EMPCA, which commenced in January 1995), and the State Policies and Projects Act 1993. Much of this legislation has

the potential to affect land use planning, including controls on vegetation clearance, to varying degrees, however exemptions from its coverage have limited its effectiveness, as discussed below.

In Tasmania, it is open to councils to place restrictions on clearance of native vegetation through their planning schemes, since the LUPAA defines vegetation clearance as a form of development (sections 20 and 3), however so far very few councils have restrictions on rural land clearing, and those that do exist are very weak or inadequately enforced (Sprod pers. comm. 1996; Miller pers. comm. 1998). Recent amendments to some planning schemes include vegetation clearance controls; these are discussed further in Chapter 5. Prior to the enactment of the LUPAA the ability of planning authorities to place and enforce planning controls on vegetation clearance was dubious (Wells 1996).

While councils ostensibly have the power to control vegetation clearance on rural land, this power is removed where the land becomes a Private timber reserve under the Forest Practices Act, as discussed in section 3.2.3 above. Exemption of PTRs from the planning system which operates under the principles of the RMPS has the potential to seriously undermine regional planning for conservation objectives. Land registered as a PTR is also exempt from any environmental impact procedures under the EMPCA - these apply to Schedule 1 activities, which are those covered by LUPAA for local government approval, or Schedule 2 activities, which are listed and do not include forestry. Forestry in State forests, and mining, are also exempted by LUPAA from planning schemes, and some planning schemes, for example Burnie, only cover a minority of the area included in a municipality (Boardman pers. comm. 1998).

Schedule 3 activities under the EMPCA are Projects of State Significance (State projects), designated by the Minister for the Environment under the State Policies and Projects Act (SPPA). Once designated as a State project by the Minister, a proposal is exempt from the land use planning system under LUPAA and the impact assessment procedures of the EMPCA. A nominated State project undergoes an assessment process outlined by the SPPA, managed by the Resource Planning and Development Commission (RPDC), which took over the functions of the former Sustainable

Development Advisory Council (SDAC) on 1 January 1998 (RPDC 1998). The Minister makes the final decision whether to approve the project. Exemption of State projects from the land use planning system could have major implications for nature conservation on private land if a project requiring extensive land clearance is deemed to be a State project; with the Minister having the final say on a proposal, the potential exists for decisions to be dominated by political considerations at the expense of environmental and conservation imperatives (Kelly 1996).

The State Policies and Projects Act also provides the mechanism for making Tasmanian Sustainable Development Policies (State Policies). The NSW and Victorian State planning policies are notable for the detail provided, being more in the nature of legislation than general policy. By contrast, Tasmanian State Policies are general in character and provide only the broadest of guidance for councils and other decision makers. The State Coastal Policy (Tasmania 1996) in particular is very general. The SPPA requires a State Policy to contain as little regulation as possible [section 5(1)(d)], although it also requires that planning schemes and council decisions must comply with the Policy (section 13), placing a considerable onus on councils to interpret the Policies and provide detail absent from the Policy itself. The Act also provides that it is an offence not to comply with a State Policy (section 14).

The Edwards Committee, which inquired into Tasmania's planning system, was highly critical of the government's performance in making State Policies, given that they were intended to be the "cornerstones of the total system" (Edwards 1997:27) and only one, the Coastal Policy, had been made at the date of the Committee's report (April 1997). It took more than three years from the release of the draft Water Quality policy (DELM 1994) for public comment to the making of the final State Policy (Tasmania 1997). The Committee commented that due to the delay in making State Policies "the Government's role in this process is not effective and should be reviewed", and that a mechanism that provides the necessary direction "in a less ponderous and more timely way" should be provided through amendments to the LUPAA (Edwards 1997:27).

Despite the faults of the State Policy process, they have the potential, once made, to make major changes to decision-making in the interests of conservation. For example the State Coastal Policy (Tasmania 1996), while very general in character, has had a significant impact on local government decisions on proposed coastal developments. The value of the Policy was clearly demonstrated by the landmark 1996 Four Mile Creek[6] decision of the Resource Management and Planning Appeals Tribunal. The Tribunal overturned a decision of the Break O'Day Council to allow a subdivision at Four Mile Creek on the east coast, on the ground that the Council's decision did not comply with the State Coastal Policy. The Tribunal commented that while the provisions of the Policy were broadly stated, the particular provisions in question, which require any coastal development to be based on existing towns and townships, were sufficiently precise to control the contents of planning schemes. A survey of Tribunal decisions for 1996 and 1997 found that of only 18 (1996) and 11 (1997) decisions based on nature conservation grounds, 3 and 2 decisions respectively, included references to the State Coastal Policy, or incorporated its requirements. The survey is discussed further in section 5.6.4.

As well as promoting nature conservation, it is equally possible for State Policies to have adverse consequences for biodiversity. One of the aims of the draft policy on agricultural land, currently being reviewed by the RPDC, is to prevent "prime agricultural land" being used for inappropriate purposes, such as subdivision for housing, and to retain it for agricultural production. Prime agricultural land is to be identified through land capability analysis, and may include land that is currently bushland. The danger in this Policy is that it may encourage clearance of land identified as prime agricultural land, so that it can be used for agriculture. Inclusion of native vegetation clearance provisions in this Policy would have ensured that availability of land both for agriculture and for biodiversity conservation were considered together.

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[6] Between Tasmanian Conservation Trust Inc. and Break O'Day Council & Glencoe P/L & the Estate of the Late G H Napier; Between Break O'Day Ratepayers Association Inc. and Break O'Day Council & Glencoe P/L & the Estate of the Late G H Napier; Between W J Manning and Break O'Day Council & Glencoe P/L & The Estate of the Late G H Napier, J 260/96.

The State Policy on Water Quality Management is also disappointing for its lack of direction on biodiversity conservation. The State Policy was criticised during the public consultation phase for its purely procedural character; many people expected the State Policy to include specific provisions requiring certain water quality parameters to be met. The treatment of forest practices in the Policy is especially disappointing, and is an interesting case study in environmental policy making, which could have implications for a State Policy on remnant vegetation management. The original draft State Policy accepted the Forest Practices Code as "best practice environmental management", exempting forestry from any requirements of the Policy. During the public consultation phase, extensive objections were made to this clause, on the grounds that the provisions of the Code with regard to protecting watercourses from damage and sedimentation during logging and roading, and from pesticide and herbicide applications, were inadequate (SDAC 1997a). In its report on the draft State Policy (SDAC 1997a), SDAC deleted the clause, and inserted a clause stating that forest practices should be conducted in accordance with the Code *and* the State Policy, and that THPs must recognise protected environmental values for water bodies and aim to achieve water quality objectives (clause 34). While probably still not specific enough to allay the concerns of those who objected to the original clause, who wanted specific provisions protecting watercourses during forestry operations placed in the Policy, this new clause at least imposed some requirements on forestry from the RMPS. In particular, failure to comply with these provisions of the State Policy would have been an offence under section 14 of the SPPA. The clause as redrafted by SDAC, however, was changed in the final State Policy, which merely requires that forest practices "should ... have regard to this Policy", and that the Code should be reviewed to ensure it is consistent with the Policy (Tasmania 1997:25). Clearly, after SDAC's report was submitted to the Minister, a political decision was made that forestry should continue to remain outside the RMPS. While the SPPA does not explicitly allow the Minister to amend a State Policy which has been submitted by SDAC (now the RPDC), this power is apparently implicit in the Act (Jones pers. comm. 1998). As with State Projects, this means that the final decision on a State Policy can be potentially dominated by political considerations, despite having gone through the apparently non-political process of public consultation and consideration by the RPDC. The State

Coastal Policy was extensively amended after submission by SDAC to the Minister (Jones pers. comm. 1998).

The Edwards Committee suggested that State Policies should succinctly outline the State's desired direction on an issue, with the detail of policies being provided by agencies (Edwards 1997). The Committee did not recommend changes to the SPPA, recommending instead that the Minister be empowered by the LUPAA to direct certain matters of State significance be included in planning schemes. The changes the Committee *suggested* to the State Policy process would provide a less political means of guiding local government than direction by the Minister, while still being more efficient than the current process. The potential of the State Policy process to ensure conservation on private land is further discussed in Chapter 5.

3.2.5 Wildlife protection and sanctuaries

The NPWA and its associated regulations provide for individual species to be declared protected species, which then cannot be harmed, taken or interfered with regardless of land tenure, unless a permit is issued (Wells 1996). So far, only species of fauna have been declared protected, so the Act has virtually no compulsory protective mechanisms for flora and habitat (Wells 1996). The Act also provides for the establishment of wildlife sanctuaries on private land (see Chapter 4).

3.3 Chapter summary

Recent publications such as SDAC (1996), Gilfedder and Kirkpatrick (1995a; 1995b, PLUC (1996b, 1997) and Greening Australia (1993) demonstrate the extent to which native vegetation in Tasmania has been modified by clearance, that this threat continues, and the extent to which many vegetation communities must be protected on private land if they are to remain part of Tasmania's natural heritage and biodiversity. Currently, there is no integrated framework to require or facilitate such protection, although the Resource Management and Planning System provides a number of mechanisms, including the regulation of vegetation clearance through planning schemes, which are discussed further in Chapter 5.

Protection of natural values on private land in Tasmania has been proceeding mainly through voluntary programs. Chapter 4 discusses voluntary programs in Tasmania and elsewhere, including the degree of protection they are able to provide for areas of high nature conservation value on private land.

Chapter 4 - Voluntary, contractual and incentive-based mechanisms for off-reserve conservation

4.1 Introduction

Voluntary actions by private landholders, whether as individuals or as part of community groups, are a valuable means of achieving nature conservation on private land. The enthusiasm which is part of many community-based efforts is immensely valuable in generating public awareness of environmental problems and the will to overcome them through co-operative work. The fact that much of the habitat for endangered species such as the forty-spotted pardalote and the swift parrot would not exist but for the efforts, and restraint, of some private landholders (Milford 1997), shows the value of voluntary approaches to conservation on private land.

It should also be recognised, however, that native vegetation continues to be cleared at an alarming rate and that threats to biodiversity can only be averted if a concerted, landscape-wide approach is taken to its conservation. The question must be asked whether voluntary programs can provide the necessary degree of guaranteed protection within an acceptable timeframe. Allied to voluntary programs are incentive measures of various kinds, usually financial, which provide encouragement to people to take voluntary conservation action, and contractual measures, whereby people voluntarily enter into conservation or environmental contracts. These approaches are discussed and evaluated in the following sections.

4.2 Community-based programs

In the last ten years, a number of programs aimed at preventing land degradation and protecting native vegetation on private land have developed. These are mainly Commonwealth programs which provide

funding to community groups for projects which meet certain criteria. Usually State government departments are also required to contribute some of the cost of the community projects, whether financially or in kind. As noted in Chapter 2, funding for programs addressing land degradation has been much greater than for those with a biodiversity perspective, that is, protecting existing native vegetation. With some former programs amalgamated under the Natural Heritage Trust (NHT), it is not clear whether this is still the case, (as discussed in section 4.2.1).

4.2.1 Native vegetation protection and restoration programs

The Bushcare program is the "largest single initiative" of the NHT, and aims to "reverse the long-term decline in the quality and extent of Australia's native vegetation in order to conserve biodiversity and contribute to the ecologically sustainable management of natural resources" (Australia 1997a:8). With funding of $330 million over four years, a "tenfold increase in direct on-the-ground funding for vegetation programs" (Australia 1997a:8), Bushcare represents a significant shift in focus by the Federal government in land management programs. For the first time, native vegetation programs have more funding than Landcare ($280 million over four years).

The Bushcare has subsumed the former Save the Bush program, and also the One Billion Trees (OBT) program which was announced during then Prime Minister Hawke's famous July 1989 Environment Statement where he committed the government to ensuring that one billion trees would be planted by the year 2000 (HSCERA 1992). HSCERA (1992) considered that in implementing OBT under contract from the Australian Nature Conservation Agency (ANCA), Greening Australia has adopted a well-planned approach, with trees and shrubs planted in areas where they can be of the maximum assistance in reversing land degradation and also in establishing large contiguous belts of native vegetation. Amalgamation of the two former programs now allows the integration of projects and

funding, with protection of remnant native vegetation and revegetation programs in the same region now considered together (Mashford pers. comm. 1997). It is not possible to determine whether more funding has been allocated under Bushcare to protecting native vegetation, or revegetation: formerly revegetation received much more funding (HSCERA 1992).

The Save the Bush program in Tasmania was very successful in increasing the level of community interest and support for vegetation conservation following the appointment of a Save the Bush coordinator in 1994 (Wells 1996). The program acted as a catalyst, with requests for the establishment of private wildlife sanctuaries and conservation covenants outstripping the resources available to implement them (Wells 1996). Much of the funding of community groups under the program to date has been concentrated in the Midlands, largely to fence off remnant vegetation from stock grazing (Wells 1996). Greening Australia, using both Save the Bush and One Billion Trees (now Bushcare) funding, is currently coordinating the Midlands Tree Corridor Project which aims to unite 30 properties to create a vegetated corridor across the predominantly pastoral country of the Midlands (Wells 1996). The program is part of the National Corridors of Green Program, a nationwide concerted effort to establish vegetation on a landscape-wide basis (Greening Australia nd).

The House of Representatives committee considered that the valuable work carried out under the Save the Bush program should be part of a more strategic approach to native vegetation conservation and restoration through regional vegetation plans (HSCERA 1992). These plans, which would be part of an overall bioregional approach to nature conservation and ecologically sustainable development, would enable funds for native vegetation programs to be directed to areas where they have the most impact and value, and would enable community groups to feel that the work they are carrying out is part of a larger plan (HSCERA 1992).

Despite the Committee's recommendations, there is still no formal, national process of bioregional planning (Mashford pers. comm. 1997). However, regional planning does take place in many areas, for example through catchment committees and local government, and "all NHT proponents are strongly encouraged to develop their projects in the context of regional planning activities, which of course are at various stages of advancement across different regions and States." (Mashford pers. comm. 1997). This type of ad hoc regional planning is not true bioregional planning, which is a co-ordinated and integrated planning system requiring direction to be set by governments (Miller 1996). Binning and Young (1997:15) comment that while "Commonwealth processes are moving increasingly to direct programs through regional processes ... most existing processes have a limited mandate and do not consider the full range of vegetation management objectives. For example, catchment management committees with a focus on soil and water management have not generally considered nature conservation issues".

The vastly increased funding and the integration of revegetation and remnant vegetation programs under Bushcare is a great leap forward for biodiversity protection. However, the anomaly still exists that while this funding is being provided, in Tasmania at least, there is still no formal, ongoing protection of native vegatation. Information from Greening Australia Tasmania shows that Greening Australia programs running from 1990 - 1993 covered approximately 1,122 hectares, however it is not clear whether all of this area was revegetated during this period (GAT 1997). This compares with around 5,000 hectares of native vegetation being cleared annually during the same period (Kirkpatrick and Jenkin 1996). Nationally, some 15,595 hectares of native vegetation has been established, with some 65,374 people involved in programs, under the One Billion Trees program (Fortech 1996). This compares with estimates of 664,000 hectares cleared per year, as discussed in Chapter 2. Under the Save the

Bush program, some 18,307 hectares of bushland has been protected nationally (Fortech 1996). In Tasmania, it is apparently not possible to determine how much bush has been protected under the Save the Bush program because many native vegetation programs had elements of funding from Save the Bush, One Billion Trees and the National Landcare Program (A.Smith pers. comm. 1998).

4.2.2 The National Landcare Program

Much of the literature evaluating community-based environmental programs focusses on Landcare, since it is the longest established program and has had a significant public profile. Although the National Landcare Program does not focus on nature or biodiversity conservation, other than where conservation assists the reversal of land degradation, it is discussed here because it offers some insights into both the potential of community-based programs and the problems associated with them.

Landcare has been hailed as a catalyst to sustainable land management in rural areas, through community action. In early 1995, there were 2,200 Landcare groups across Australia, with a total of 65,000 members; in January 1994 there were 126 groups in Tasmania with a total membership of 4,625 (Curtis and De Lacy 1995). The value of Landcare lies in its ability to harness concern for the health of the land through community and individual awareness and action. Landcare has enabled the devolution of government funds to the local level where they can potentially be more effectively be used.

Some analysts of Landcare have raised doubts about the program's ability to bring about long term environmental sustainability in rural areas (for example Lockie 1995; Curtis and De Lacy 1995), while others are enthusiastic about its capabilities (for example Campbell 1994). The focus of the National Landcare Program (which continues under the NHT), is the dissemination of information and creation of awareness of land

degradation amongst rural communities and landholders (HSCERA 1992). The major concern expressed by critics is that while it has been undoubtedly successful at raising awareness of these issues, the Program has done little to achieve major action "on the ground", due to the focus of its funding on demonstration and awareness-raising (Lockie 1995; Curtis and De Lacy 1995; HSCERA 1992).

While focussing on the formation of community landcare groups and raising of public awarenesss through those groups, Landcare relies on individual farmers and groups of farmers or other rural residents, to provide the money, time and other resources to carry out projects, such as planting and fencing, and often these resources are in short supply in rural areas (Lockie 1995; Curtis and De Lacy 1995). The rhetoric of community involvement can therefore be seen in some ways as a device by the government to avoid the significant funding required to carry out on the ground works to reverse and prevent land degradation.

Farrier (1995a) and Bradsen (1992) point out that Landcare is essentially aimed at redressing land degradation in order to increase the land's productivity. They also comment that a program aimed purely at protecting biodiversity would be unlikely to gain the same popularity. Self-interest is a powerful motivator behind the Landcare movement, which does not necessarily apply to nature conservation per se on private land. The House of Representatives inquiry commented that the National Soil Conservation Program (the forerunner of the Landcare program) should be focussed much more on activities that ensure protection of biodiversity, which is in the interests of farmers as much as the rest of the community, and again stressed the need for a scientifically based bioregional planning approach to land restoration (HSCERA 1992). Since then, Landcare groups have become much more involved in total or integrated catchment management, and preparation of regional plans for the conservation and planting of vegetation and other activities (Campbell 1994). Campbell

(1994) also discusses instances where local Landcare groups have been the catalyst behind habitat protection projects (Campbell 1994). With the restructuring of programs under the NHT, and increased funding of vegetation projects, it will be interesting to see whether the Landcare ethic extends to protecting the bush.

The NHT brochure emphasises that the new funding arrangements will "refocus the National Landcare Program, broadening its scope by tackling specific issues on the ground and taking a more integrated approach to its activities", including funding the preparation of regional and catchment conservation strategies, and community projects addressing "critical issues on both private and public land for public benefit" (Australia 1997a:6). While it is too early to tell what changes will be made "on the ground", the descriptions contained in the NHT brochure seem directed at answering many of the criticisms made by analysts of Landcare.

4.2.3 Conclusion on community-based programs

With the major increase in funding for vegetation programs, and the planned refocussing of the Landcare program, the Government seems to be adopting a strategy of relying on community goodwill and hard work to reverse the current decline in native vegetation, and land degradation. The figures above comparing the achievements of native vegetation programs with the extent of land clearance do not offer hope that this will be a successful strategy as far as native vegetation cover is concerned, even with substantially increased funding. The reality also remains that the protection of biodiversity requires, first and foremost, the protection of large intact areas wherever possible, rather than scattered or even linked remnants. The Government's concurrent policy of encouraging the clearance of native vegetation for woodchipping and plantation establishment (Graham 1996; TWS 1996) plus the continuing land clearance for agriculture and subdivisions in many areas has the potential to negate the achievements of these programs. One of the major criticisms

of Landcare, that the devolution of responsibility to community groups has depoliticised the issue of land degradation, now also has the potential to apply to native vegetation programs: the major increase in funding and focus under the NHT, and expected major mobilisation of community groups in response, has the potential to distract attention away from the parallel destruction of native vegetation.

4.3 Private sanctuaries and Land for Wildlife

Most Australian States have legislation allowing the establishment of wildlife sanctuaries on private land (PLUC 1996e). In all cases, these areas are established voluntarily by the landholder, although there may be a binding agreement entered into between the landowner and the Parks and Wildlife Service of the particular State, which provides for management of the area (PLUC 1996). In New South Wales, over 500 Wildlife Refuges have been established on properties covering approximately 2,250,000 hectares (ANZECC 1996; Binning and Young 1997). In South Australia, 55 sanctuaries covered over 30,000 hectares in 1996 with another five being considered (ANZECC 1996).

In Tasmania, the National Parks and Wildlife Act provides for the establishment of private wildlife sanctuaries. Once agreed by the landholder, the sanctuary becomes binding on the land title (Wells 1995). A wildlife sanctuary on private land, known as a private reserve, does not impose any particular requirements on the landholder, who can continue with existing uses and activities, however the sanctuary status imposes enforceable conservation area regulations on the public (Wells 1996). A private reserve may become subject to a management plan, agreed to by the landholder and the Parks and Wildlife Service and also entered on the land title. As at October 1996 there were 41 wildlife sanctuaries, with nine of these having either statutory management plans or draft management plans (PLUC 1996e).

The establishment of wildlife sanctuaries on private land clearly has the potential for significant nature conservation and biodiversity gains, particularly since there are many flora communities and some endangered species which are mainly found on private land. Unless the sanctuary becomes binding on the land title, the continued existence of a sanctuary is dependent on the continued support of existing and future landholders. In addition, management practices may have to be agreed with landholders who could, through their land management practices, inadvertently cause harm to the wildlife they are aiming to protect. In Tasmania the curious position exists that, in the absence of a management plan, the landholder's activities are not limited in any way in the wildlife sanctuary. It has been pointed out that the Parks and Wildlife Service lacks the resources to promote and ensure proper management of private wildlife sanctuaries (Wells 1996; ANZECC 1996).

Similarly, Land for Wildlife is a purely voluntary scheme for participation by conservation-minded private landholders. The scheme was introduced in Victoria in 1981 and is administered by the Department of Natural Resources and Environment and the Bird Observers Club (ANZECC 1996). The program encourages and assists landholders to manage their land for wildlife or to integrate nature conservation with other land management objectives (ANZECC 1996; Platt 1996). There are now over 3,500 properties involved in the scheme on which over 80,000 hectares has been identified by landholders as being managed for wildlife (ANZECC 1996). A number of habitats of significant conservation interest, including dry woodlands have been included in the scheme, and the scheme has targetted landholders in key habitat areas for specific contact and assistance (Platt 1996).

Western Australia, Queensland and Tasmania have all established pilot Land for Wildlife schemes along the lines of the Victorian scheme (ANZECC 1996). In Tasmania, the Parks and Wildlife Service undertook a

pilot project in 1994 to assess the feasibility of introducing a Land for Wildlife program, and concluded that such a scheme would be very successful, with about one hundred farmers interested in participating (Wells 1996; S. Smith pers. comm. 1998). The scheme will shortly commence in Tasmania, following an agreement reached with Victoria, which is requiring written agreements with all States wishing to emulate the Victorian scheme (S. Smith pers. comm. 1998).

Land for Wildlife is clearly a very effective scheme for harnessing the enthusiasm of individual landholders to manage their land in a way that allows them to cater for wildlife protection as well as their normal activities. As with private sanctuaries, however, it is highly dependent on the motivation of individual landholders, which could change with land ownership or succession within the family, as pointed out by Gilfedder and Kirkpatrick (1995a). Binning and Young (1997) consider that purely voluntary programs, while valuable, are unlikely of themselves to change landholder behaviour in the short term. They recommend that a national Land for Wildlife Program be developed, including biological monitoring and performance measures, and that it should be integrated with other voluntary and non-voluntary programs.

4.4 Conservation agreements and covenants

Conservation agreements, which may be binding for a set period or which may be in the form of a covenant binding on the land in perpetuity are becoming increasingly advocated as an effective way to ensure conservation on private land. In contrast to some other countries such as the UK and US, conservation agreements have not to date been a major aspect of conservation of private land in most parts of Australia. However they have the potential to be an important means to integrate private landholdings with conservation, especially where a strategic approach is

used to identify areas to be part of such a scheme (Young 1995; PLUC 1996e).

Overseas experience, and the limited experience to date in Australia, shows that some types of conservation agreements are more effective than others. The following discussion outlines the use of conservation agreements in the UK, Europe and US, existing programs in Australia and ideas for the future.

4.4.1 United Kingdom and Europe

Contractual arrangements, usually in conjunction with financial incentives, are used extensively in Europe and the United Kingdom to achieve environmental and, to a lesser extent, conservation outcomes. In the UK and elsewhere in Europe, the focus of conservation on private land is on conservation of rural landscapes, which have been shaped through thousands of years of agriculture and are an aspect of national heritage (Dwyer and Hodge 1996); there is a well-established tradition of using predominantly voluntary measures to persuade private landholders to conserve nature and landscapes (Farrier 1995b).

During and following World War II, a desire for self-sufficiency in agricultural production in the UK saw an immense effort put into increasing agricultural production, with associated modern industrial farming methods (Green 1989). The cessation of age-old farming methods, such as the removal of hedgerows, saw the destruction of many of the conservation values of the English countryside (Green 1989). The Common Agricultural Policy (CAP) of the European Community during the 1980s exacerbated this trend by promoting greatly increased production levels through subsidies to farmers (Dwyer and Hodge 1996). The desire to stem the resultant over-production in the late 1980s and the 1990s has created an opportunity to return to farming methods that promote conservation values and environmental protection (Crossthwaite 1995;

CEC 1993). Various new subsidy programs pay farmers both to stop farming an area (set-aside) and to adopt less intensive, traditional farming methods which result in less production and have a beneficial effect on the environment.

In the UK, Sites of Special Scientific Interest (SSSI) may be declared over areas of private land, under the Wildlife and Countryside Act 1981. If a landholder intends to take an action that would harm the values of the SSSI, he or she must notify the Nature Conservancy Council (NCC - a statutory authority) which may offer the landholder an environmental contract. The contract would provide for the landholder to desist from harmful activities, and possibly to undertake positive management activities, in order to protect the conservation values of the area, and for payment of compensation by the NCC. These provisions in the Act are backed up by penalties, however it is a defence under the Act if the activity was authorised by the local planning authority. If the NCC does not offer a contract within four months of notification by the landholder, the activity may go ahead regardless. Similarly, if the landholder and the NCC cannot agree on a contract within twelve months of notification, the activity may also go ahead. Similar provisions apply to areas of land considered by the Secretary of State to be of special interest, or of national importance by reason of their flora, fauna, geological or physiographical features. The NCC also has the power to compulsorily acquire land in any of these categories, with fair compensation for the owner, however this power is rarely used (Dwyer and Hodge 1996).

What these provisions mean in practice is that although the Secretary of State and the NCC may make orders that certain areas of land are of special nature conservation significance and must not be damaged, these provisions have compulsory effect only for a limited time, and protection of the areas is dependent on the Conservancy and the landholder entering

into a management agreement, which may provide for compensation for loss of use of the land.

In 1990, there were 1,759 agreeements with landholders within SSSIs in the UK, (with most lasting 21 years) and costing a total of £6.85 million a year, with payments mostly being made for not undertaking potentially damaging operations (Crossthwaite 1995). Recently, payments have shifted from compensating to rewarding the landholder for active management, with the outcomes seen to be better conservation results and reduced antagonism of landholders (Crossthwaite 1995).

Other rural nature conservation programs in the UK include the Country Stewardship program, run by the Countryside Commission, which provides for 10 year voluntary agreements covering management and capital costs to conserve wildlife habitats (Young et al. 1996), and the Environmentally Sensitive Areas Scheme (ESA), run by the Ministry for Agriculture, Fisheries and Food (MAFF), also based on 10 year agreements, with payments based on a per hectare basis to farmers who agree to carry out, or to refrain from, certain practices (PLUC 1996e).

The ESA was based on European Union (EU) legislation passed in 1985, which permitted Member States to introduce an aid scheme "to contribute to the introduction or maintenance of farming practices compatible with the requirements of the protection of the environment (CEC 1993)". The EU envisioned that farmers in designated areas of high conservation value would agree to adopt "environmentally friendly" farming practices for all or part of their farms and receive payment for doing so over a five year period. The funding of the scheme as an agriculture program recognises its role in securing farm income as well as its environmental aims (Robinson 1994).

ESAs were introduced in the UK in 1986 through legislation which enabled designation of an area as an ESA if it is "particularly desirable to protect its natural beauty, flora or fauna, or historical or archaeological features and if this objective is likely to be assisted by the maintenance or adoption of particular agricultural methods" (Robinson 1994:216). Within the ESA, payments are made to individual farmers adopting more environmentally-friendly farming practices, such as reducing fertiliser and pesticide inputs, using certain stocking rates and pasture management methods, building and maintaining stone walls, with higher payments for activities such as raising ground water levels and regenerating heather (Crossthwaite 1995). Farmers who benefit most from the scheme, and represent most of the participants, are those with medium-sized farms, since farmers with larger holdings found the payments were not worthwhile to them, while those with smaller farms found that the proportionately smaller flat-rate payment available to them and the smaller number of features on their land eligible for itemised payments were not adequate (Robinson 1994).

The scheme has a number of weaknesses, notably its "component approach" to conservation, whereby only certain features within the landscape are deemed worthy of protection, and the voluntary nature of the scheme, which together result in a patchwork of areas and features, some conserved and some not, within an ESA (Robinson 1994). Extensions to the scheme have resulted in the establishment of farm conservation plans, flat-rate annual payment in return for a standardised set of conditions and a second tier of payments in exchange for other positive management activities (Robinson 1994). The ESA scheme is part of a broader program, which includes payments to farmers for converting their fields into wildlife-rich habitats and compensation to hill farmers for reducing the size of their sheep flocks. The UK now has some 20 schemes which pay farmers for varying aspects of environmental management and conservation (OECD nd).

Partly as a result of the favourable view within the EU of the UK's ESA scheme, all Member States now operate schemes to encourage environmentally sensitive farming (Robinson 1994). The EU has a target of 15% of agricultural areas under management contracts by 2000, with the EU mandating several types of financial assistance designed to encourage farmers to operate their landholding in an environmentally friendly way (CEC 1993).

4.4.2 United States

In the US, there are a number of programs involving private landholders entering agreements to restrict their land use, in exchange for some form of payment. To a much greater extent than in the Europe and the UK, many of these programs are targetted at private landholders whose land remains in a relatively natural state and is important habitat for many species. There are also programs focussing on agricultural areas, particularly in order to rehabilitate degraded land.

The Partners for Wildlife Program aims to develop partnerships between the States and private bodies to fund projects, with landholders who receive funds being required to enter into binding legal obligations depending on State arrangements (Farrier 1995b). The program is largely oriented towards wetland protection and restoration, with other priorities being protection of threatened species, migratory birds, certain fishes and especially threatened habitats (Adamick 1996). The minimum duration of agreements with landholders is ten years (Adamick 1996).

Similarly, under the Wetlands Reserve Program (WRP) wetlands are protected under a perpetual or thirty year easement requiring the restoration and management of wetlands (Adamacik 1996). Responsibility for management of the easements and wetlands is given to non-government organisations, such as the Nature Conservancy and the Conservation Fund (Adamcik 1996), which have large easement programs

of their own and substantial experience with land management for conservation.

According to Farrier (1995b), biodiversity conservation programs (apart from the WRP) generally receive much lower levels of funding than Federal government programs which subsidise farmers to take their land out of production, to reduce overproduction, arrest land degradation and subsidise farmers' incomes. While the latter programs have biodiversity or wildlife conservation objectives to some extent, these are not their primary objectives, and they have had limited effectiveness for biodiversity conservation. The programs are the Conservation Reserve Program (CRP), under which farmers are paid under ten year agreements to let their land lie fallow, with agreements reached through a competitive bidding process, and focussing on land degradation and water quality; and the Sodbuster and Swampbuster programs, under which farmers are threatened with loss of agricultural subsidies if they farm highly erodible land or convert wetlands for agricultural production. Biodiversity conservation is at best a secondary concern of Sodbuster, with Swampbuster slightly more useful for this purpose although limited by a number of exemptions and the fact that it ignores destruction of wetlands for other purposes, such as real estate development (Farrier 1995b).

While these programs aim at the conversion of current agricultural land back into useful habitat, Farrier argues that they are not useful for biodiversity conservation, which requires the conservation of undisturbed land. There is also substantial evidence that the programs are undermined by non-compliance (Farrier 1995b; Adamcik 1996).

4.4.3 Australia

Legislation allowing conservation agreements or covenants between government agencies and landowners exists in all Australian States and the Northern Territory. Often some financial assistance is available, such

as with the cost of fencing (Western Australian Remnant Vegetation Scheme) (ANZECC 1996), rates rebates (Queensland Nature Refuges) (Binning and Young 1997) or payments in the nature of compensation or management fees (a number of these schemes are discussed below).

South Australia was the first Australian State to make extensive use of conservation covenants, through its Heritage Agreement scheme. The scheme was originally introduced in 1980 as a purely voluntary measure to encourage landholders to protect native vegetation on their land. The scheme consisted of a voluntary agreement between the landowner and the Minister, which was entered on the land title and became binding on all successors in title. The agreements could include as conditions actions required to be taken by the landholder to manage the vegetation retained. Financial incentives were principally grants to reimburse the cost of local government rates and the provision of stockproof fencing. In the first two years of the Scheme, 170 sites were covered by Heritage Agreements covering 150,000 hectares, with payment of $450,000 in incentives (Harris 1996). However, by 1982, only 0.75% of the native vegetation remaining in the agricultural regions had been approved for inclusion in the scheme, few farmers proposing to clear were changing their plans and clearance rates remained high (Harris 1996). The indications were that only farmers with a strong commitment to protecting the native vegetation on their properties were interested in the scheme (Farrier 1995a).

The system clearly wasn't resulting in a reduction in clearing of native vegetation, and the incoming Labor Government introduced compulsory clearance controls in 1983 (Harris 1996). The Heritage Agreement scheme however continued, and received a substantial boost in 1985 with the Native Vegetation Management Act, which, however, tied the agreements to refusal of clearance consent and the payment of compensation. Although landholders could still voluntarily apply for Agreements, the

scheme could no longer be called a voluntary one. The South Australian legislation is discussed further in Chapter 5.

In Queensland, the Nature Conservation Act 1992 provides for an integrated system of habitat and wildlife protection through both protected areas and wildlife protection provisions. Perhaps the major difference between the Queensland legislation and that in other States, is that it advocates a strategic approach to protecting whole areas of habitat, whether on private or public land, with the principle means of achieving conservation on private land being through conservation agreements. A Nature Refuge may be declared over any land subject to a conservation agreement, which is a contract between the Minister and the landholder outlining activities that are permitted or prohibited and any financial arrangements that may be involved. A conservation agreement can be of fixed duration or can be permanent and registered on the land title (ANZECC 1996). While some incentives are offered, focussed on priority regions and including rate relief offered by some local councils, take-up of Nature Refuges has been slow, with 11 established and another 33 being negotiated as at July 1997 (Binning and Young 1997).

As discussed in Chapter 3, provisions now exist in the Tasmanian National Parks and Wildlife Act to allow landholders to enter into conservation covenants voluntarily or as the result of a timber harvesting plan being refused in order to protect a threatened species. No covenants have yet been entered into, apparently due to lack or resources both to implement the scheme and also because the covenants are linked to compensation, and no compensation money is yet available (ANZECC 1996; Dyring pers. comm. 1997; Ricketts pers. comm. 1997). This situation may now change with the conclusion of the RFA.

4.4.4 Regional Forest Agreement

As discussed in Chapter 3, a number of forest communities in Tasmania are now found mainly or only on private land, so that in order to reach the 15% protection target of the Regional Forest Agreement, some areas of private land are required to be protected. It was clear from the outset of the RFA process in Tasmania that only voluntary mechanisms for protection of private forested lands would be considered, with acquisition by government as a last resort (PLUC 1996a).

4.4.4.1 Public Land Use Commission inquiry

PLUC carried out an extensive public consultation exercise in carrying out its inquiry into mechanisms to achieve conservation of private forested land as part of the RFA. The inquiry found that, given its terms of reference only allowed voluntary mechanisms, the two most favoured options were the offer of voluntary sale to the government (acquisition) and stewardship agreements and payments, as advocated by Farrier (1995a; 1995b; 1996). As with the various conservation and environmental agreements discussed above, stewardship agreements involve the two parties coming to an agreement on the activities to be excluded and those to be undertaken by the landholder to actively manage the land for conservation, in exchange for payments and advice from a government agency (PLUC 1996e). PLUC also recommended that, as well as stewardship agreements and payments, compensation be paid, however the recommendations were silent on the method of determining compensation (PLUC 1997b).

PLUC's recommendations were disappointingly inconclusive, especially given the length of time and the resources expended on the inquiry by the PLUC, other government officials, community groups, individuals and industry. PLUC recommends an "implementation methodology" which is dependent upon suggested changes to the land use planning system which are vague and may not be adopted. It recommends that, in conjunction

with the proposed RFA legislation, a State policy be adopted which identifies areas of private land required for the CAR reserve system, and then requires that when a landholder of one of these areas applies to local government for approval to undertake works (not being commercial forestry) that would jeopardise the area's values, the application is referred to a Management Committee which would determine whether acquisition or stewardship agreement would be the appropriate outcome, and would attempt to reach agreement with the landholder (PLUC 1997b). Commercial forestry would continue to be considered under the current forest practices infrastructure, again with referrals to the Management Committee.

While superficially this appears to be an ideal solution, since it does not involve an active and expensive program of acquisition or offering of agreements by government, there are a number of problems. The nexus between the application to carry out works and the final decision on the future of the land is unclear: currently there is no requirement for landholders carrying out non-commercial forestry (such as clearing for agriculture) to obtain any approval from local government. Unless the prospect of compensation and a stewardship agreement or voluntary sale to government is considered to be adequate to induce landholders to apply, in the absence of some form of regulatory control (that is, a decision-making role that the works may or may not be undertaken), there seems to be no reason for a landholder to make the application in the first place. The PLUC report does not go into details on the proposed process. In the end, from the PLUC's final report it is unclear whether the process recommended to be adopted would be purely voluntary or would involve some form of regulation via the land use planning system.

It was clear from comments made on the PLUC's initial report (PLUC 1996e) and during public workshops and meetings (PLUC 1997c) that any non-voluntary system of achieving conservation of forested private land is

anathema to the agricultural and forestry sectors. A Private Forests Reference Group, consisting of industry and farmers' group representatives, was set up as part of the consultation process. The Group recommended a purely voluntary process whereby priority areas would be identified and agreements and sale would be offered in order of priority to landholders in those areas (PLUC 1997c). This process could result in large areas of high conservation value forest on private land not being secured as part of the CAR reserve system, and also in very fragmented off-reserve forest conservation. This promises to be the outcome of any purely voluntary system. The recommendations of the PLUC, while inconclusive and dependent on further drawn-out decision-making by government, at least offer some hope that there could be in place a decision-making process that would ensure a much greater degree of conservation of these valuable areas.

4.4.4.2 RFA outcomes for private land in Tasmania

The Tasmanian RFA was concluded on 8 November 1997. The Agreement provides for negotiations to be held with private landowners over voluntary protection of their land, with $30 million allocated for financial assistance,

$20 million of this coming from the Natural Heritage Trust (Australia 1997b). A range of methods are to be used to secure protection of private forested land for conservation in perpetuity, including stewardship agreements, with only voluntary measures to be used (Australia 1997b). While the RFA itself does not discuss the areas of private land to be sought for inclusion in the system, Dally (1997) states that 90,000 hectares are to be added to the CAR reserve system through the inclusion of private land. The RFA itself does not go into detail on the process and mechanisms to be used to achieve this protection, presumably leaving this up to the State government and its agencies to decide.

When funding from the RFA becomes available, conservation covenants may begin to be negotiated, although at the time of writing the process to be used in reaching agreements with landholders had not been determined (Brown, pers. comm. 1998). It was also unclear whether the money to be provided under the RFA will be available for compensation in existing cases where landholders' timber harvesting plans have been refused due to the existence of a threatened species on their land; the two cases currently under consideration may take some time to be resolved (Brown, pers. comm. 1997).

4.4.5 Conclusions on conservation agreements

Environmental or conservation contracts have the potential to create lasting benefits for nature conservation in rural areas, especially where they are adapted to the particular management requirements of a site. However, a number of problems with them have been identified (Young et al. 1996; Hodge 1991; Hodge, Adams and Bourne 1994; Farrier 1995a, 1995b, 1996; OECD nd; PLUC 1996e; Binning and Young 1997). Contractual arrangements usually last only for a specified time, say five or ten years, with payments and the contract ceasing after that time. While the landholder may in that time have become adapted to the practices required by the contract, it is equally possible that, once the payments cease, the former practices will return. Similarly, contractual arrangements can always be changed by agreement; and if the land is sold arrangements which are not registered on the land title as a covenant will not be carried over. The requirement on a conservation authority to continue making payments to farmers over many years is a burden which may not always be possible given limitations in government funding.

Conservation covenants, which "run with the land" provide a much greater degree of certainty that the management practices required will continue, and that the land or wildlife is safe from destruction. For this reason, that they "bind future generations" or act as a "dead hand" (Dwyer

and Hodge 1996), conservation covenants are not popular among landholders (Gilfedder and Kirkpatrick 1995a; Ricketts pers. comm. 1997; PLUC 1997c). Therefore, a combination approach where there are some financial incentives, plus an incentive created by some form of regulation, is a more appropriate approach (Young et al. 1996; Hodge 1991).

Another problem with many of the conservation agreement schemes currently is that they have no sound ecological basis, that is, they generally do not form part of an ecosystem or landscape approach to conservation. The Environmentally Sensitive Areas scheme in the UK attempts to work on a geographic basis, but is undermined by the fact that participation is voluntary, resulting in a mosaic of protected and unprotected areas. Young (1995) proposes a scheme where land to be included in a voluntary conservation covenant scheme is identified by use of a geographical information system (GIS), according to biological value, and tenders would be called. Land for inclusion in the scheme would be selected according to biological value, the price of the tender and the nature of the land already in the protected area network. While this approach would involve a scientific approach to identifying land to be included in the system, favouring for example land buffering a protected area, it would still be dependent upon voluntary participation, and the payment of a high enough price by the government agency concerned. Again, a combination approach offers more certainty that conservation values are being protected on a rational, ecological basis. Hodge (1991) suggests that a form of regulation (based on ecological requirements) sets the basic requirement for conservation on private land, and further incentives are offered in return for a conservation covenant which involves a higher level of protection. Combination approaches are discussed in section 5.7).

4.5 Financial measures

4.5.1 General

The financial implications of setting aside land from a landholder's normal land uses and/or managing it for conservation are often a major disincentive for landholders, particularly where farming is not producing a high income (as evidenced by surveys carried out by Young et al. 1996; Gilfedder and Kirkpatrick 1995b; Greening Australia 1993; and Stadtler 1983). Financial measures taken without consideration of their impacts on nature or biodiversity can also be responsible for negative impacts (these are called "perverse incentives"). For example, until 1983, the Commonwealth paid taxation rebates for clearing of native vegetation (Blythe and Kirby 1984); financial assistance during droughts has also resulted in the maintenance of excessive stocking rates and other activities harmful to marginal rural land (Roberts 1995; Young et al. 1996) In Europe, the high subsidies paid by the EU for agricultural products have led to overproduction, excessive use of fertilisers and pesticides and destruction of native habitat (OECD nd).

It is clear from the literature that only landholders committed to conservation goals, and those who are able to afford it, will participate in purely voluntary programs (Young et al. 1996; Gilfedder and Kirkpatrick 1995a; 1995b). Incentives are therefore necessary to ensure greater levels of participation; with these incentives being either positive, through financial or other assistance, or negative, through regulation. The issue of the government's right to restrict the activities of private landholders through regulation, and the role of compensation or management payments as an adjunct to regulation (combination approaches) are discussed in Chapter 5. A related issue, relevant to voluntary approaches, is the degree to which landholders should be expected to pay for conservation measures on their own land, and to forego economic benefits,

and the degree to which the government should be required to pay for the public benefit of nature conservation.

Increasingly, the view being taken by writers in the field (such as Binning and Young 1997; Hodge 1991; and Farrier 1995a, 1995b, 1996) is that private landholders have a "duty of care" for sustainable land management. This duty of care, which means a standard which landowners would be expected to meet, may be defined by legislation, regulations and regional sustainable land use objectives, thus "forc[ing the] incorporation of landscape wide costs of ecosystem maintenance into the normal costs of production" (Binning and Young 1997:21). The public would be responsible for paying for conservation services and benefits which go beyond this duty of care, for example by acquiring areas of high conservation value or critical habitat for threatened species into the public reserve system or reaching management agreements with the landholder. The public could also make transitional payments to assist landholders to meet new land use objectives, but these would be short-term payments only (Farrier 1995b; Binning and Young 1997). The PLUC in its RFA final recommendations report (PLUC 1997b) considered that there is a "normal duty of care" accepted by most farmers to care for their land, including forested areas, in a manner that would come within the definition of "sustainable development" used in the Tasmanian RMPS legislation:

> *'sustainable development' means managing the use, development and protection of natural resources in a way or at a rate which enables people and communities to provide for their social, economic and cultural well-being and for their health and safety while -*
> *(a) sustaining the potential of natural and physical resources to meet the reasonably foreseeable needs of future generations; and*
> *(b) safeguarding the life-supporting capacity of air, water, soil and ecosystems; and*

(c) avoiding, remedying or mitigating any adverse effects of activities on the environment (PLUC 1997b:122).

In PLUC's view, compensation or financial assistance should only be available where the landholder goes beyond this duty of care; and conversely, presumably externally imposed conservation measures would only come into play if the duty of care is not being met by the landholder. The adoption of a definition of duty of care for private landholders, based on the definition of sustainable development outlined above, would be a significant step towards ensuring that land management practices are consistent with protection of native vegetation on private land. However, adoption of a definition is one thing, ensuring that landholders meet their duty of care is another. The generality of the definition of sustainable development would also require detailed interpretation in order to be applicable to specific situations. The current state of Tasmania's native vegetation communities, discussed in Chapter 3, raises doubts about whether landholders have adopted a sustainable development duty of care, as asserted by PLUC (1997b). A State Policy on native vegetation management, which would become part of the land use planning system via planning schemes, would be an appropriate vehicle for putting in place the concept of a duty of care for private landholders. The potential role of a State Policy is discussed further in Chapter 5.

Financial measures are important in assisting landholders to carry out conservation measures on their own land. Financial incentives for voluntary conservation initiatives are more politically acceptable than regulation (Young et al. 1996). In addition, especially where community programs are involved, there is usually a very substantial "multiplier effect" where government "seed funding" may result in up to eight times that amount being contributed through individual, community and industry funds and effort (Fortech 1996; OECD nd). However, voluntary approaches, even with financial incentives, lack the certainty and direction

provided by well-structured regulatory, and especially combination, approaches (discussed in Chapter 5).

The impacts of financial measures, both negative and positive, are increasingly being recognised at government level and a range of innovative approaches are available to discourage destruction of habitat and the use of environmentally destructive farming methods, or to encourage positive conservation measures on private land. A number of these measures were discussed in the sections on community programs and conservation agreements. These range from direct grants to community groups to undertake restoration work, or to fence off remnant native vegetation, to compensation, ongoing management payments, rate rebates and fencing assistance provided to landholders who enter into conservation agreements, and set-aside payments to farmers not to farm their land. The potential for incentives to be made available through the taxation system and options for funding programs are discussed below.

4.5.2 Taxation

The taxation system has the potential to be used to create incentives for environmentally beneficial land uses and practices and to discourage harmful practices. In Australia the taxation system is only just starting to be used in this way. Deductions are available under sections 75B and 75D of the Income Tax Assessment Act 1936 for capital expenditure incurred primarily for the eradication of plant and animal pests or for preventing or combatting land degradation (PLUC 1997b; DPIE nd). These deductions are only available for expenditure aimed at preventing or reversing land degradation, although some of this work may have benefits for protecting flora and fauna. Some allowable deductions, for example for irrigation and dam construction, may actually be destructive of biodiversity (Young et al. 1996). No deductions are available for expenditure on activities purely aimed at protecting or enhancing biodiversity (Young et al. 1996). This is an anomolous situation which, while a vast improvement on the former

incentives for vegetation clearance, does nothing to encourange landholders to improve the nature conservation potential of their land.

The Australian taxation system also does not encourage innovative approaches to conservation on private land. While donations of money to approved environmental organisations are tax deductible (DPIE nd) there are no exemptions from capital gains tax for gifts of land to conservation organisations, or for placing conservation covenants over land (Young et al. 1996). In 1994, the Australian Democrats sought unsuccessfully in the Senate to amend tax legislation to permit tax deductibility for all land gifted to appropriate environmental organisations (Rosen 1995).

Non-government organisations (NGOs) have a significant role in protection of high conservation value private land in other countries, such as the UK and US, where there is a strong tradition of NGOs owning and managing extensive tracts of land for conservation (PLUC 1996e; Dwyer and Hodge 1996; Farrier 1995b). In the US, land trusts such as the Nature Conservancy, which holds over 600 easements, purchase land and manage it for conservation as well as entering into conservation easement agreements with private landholders (Farrier 1995b). In the UK there are a number of Conservation, Amenity and Recreation Trusts (CARTs), non-profit private conservation organisations which own and manage land, dominated by the National Trust, which owns or holds under covenant about 250,000 hectares (Hodge 1991). As in the US, these organisations play a significant role in protecting nature conservation values on private land. They have the advantage of being largely independent of government, able to operate freely in the market place and to deal with landholders without bureaucratic restrictions, and have much more financial flexibility than government departments (Farrier 1995b; Whelan 1996).

In Australia to date the role of NGOs in conservation on private land has been limited, with some notable exceptions. These are the Trust for Nature

(Victoria) and the Australian Bush Heritage Fund. Established by legislation in 1972, the Trust for Nature has been successful in purchasing high conservation private land, negotiating conservation covenants with landholders and selling purchased land after placing its own covenants on the land (Whelan 1996). The Bush Heritage Fund, a private fund initially established by then Tasmanian parliamentarian Dr Bob Brown, purchases areas of private land throughout Australia and manages them for conservation purposes (Young et al. 1996; Australian Bush Heritage Fund nd).

The potentially significant role of conservation NGOs in Australia is restricted by taxation laws. Young et al. (1996:31) comment that the "mere creation of a conservation covenant triggers some extremely complex capital gains tax considerations in Australia, involving the creation and disposal of an asset", and that perhaps more effective use of conservation covenants could be achieved if a capital gains tax exemption applied. In the US on the other hand, a deduction is specifically provided for the monetary value of a conservation easement (Young et al. 1996; Farrier 1995b). Similarly, in the UK, exemption from Capital Gains Tax is available for gifts of Heritage Property (of scenic, historic or scientific interest), as long as the recipient agrees to abide by a management plan; full Capital Gains Tax liability applies for any breach of the plan, and a similar scheme has been recommended in Canada (Young et al. 1996).

The current income tax deduction provisions are also regressive in that they give the greatest benefit to farmers with the highest taxable income; the provisions are of no benefit to the many farmers who have very little or no taxable income, and who are the very landholders who are least able to participate in conservation or landcare-type programs (Young et al. 1996). Crossthwaite (1995) recommends the use of tax rebates, which are payable even in the case of negative income, instead of tax concessions.

Land taxes, charged by State governments, may also be a strong disincentive to conservation on private land, since land used for primary production is usually exempt from the charges (Rosen 1995). Exemption from some State government charges is available in some cases, for example in South Australia, State charges may be waived where land is sold or donated to approved non-government organisations for conservation purposes (ANZECC 1996). In NSW, land that is used primarily for the maintenance of endangered species can be exempt from land tax (Rosen 1995). Incentives such as this are a forward-thinking way of encouraging long-term protection measures such as conservation covenants. Local government rates can also be a disincentive to conservation on private land, however not all councils are in a position to reduce rates in exchange for conservation (the role of local government in facilitating conservation on private land is discussed in Chapter 5).

It is possible for the taxation system to be used in very innovative ways to protect biodiversity and encourage nature conservation on private land. In the US, preferential taxation treatment is available where the land is being managed for conservation purposes, for example where the landholder enters into a conservation management agreement for at least ten years the land is assessed at its current use, rather than market value (Young et al. 1996). In Canada, under the Ontario Conservation Land Tax Reduction Program, a rebate of up to 100% of eligible property tax is conditional on landholders entering into a long term management agreement; landholders who cease to maintain conservation land in its natural state must repay an amount equal to the total rebates received in the last 10 years, plus 10% interest (Young et al. 1996). In Germany a differential land tax program operates whereby land is classified into categories on the basis of environmental benefit; a charge is applied if a landholder changes to a more environmentally destructive land use and the charge increases as more environmental downgrading occurs (Young et al. 1996).

These types of innovative schemes, particularly the Ontario and German schemes, are a useful way of applying financial incentives without regulatory intervention, while still maintaining stringent land use controls, and could potentially be very useful in Australia to prevent damaging land use changes.

4.5.3 Rural subsidies and funding of programs

While subsidies are not as common in Australia as in many other countries, (overall agricultural support in 1990 was 11% compared to Japan's 68% and the EU's 48%) (Young et al. 1996), large amounts of money are still paid to the rural sector by government every year. For example, in 1992-93 the Commonwealth made $320 million available via the Rural Adjustment Scheme, including $50.6 million for drought and wool industry funding, and in 1994-95 an additional $164 million was made available for drought funding (ACF 1995). As discussed earlier, large amounts of money are paid by the Commonwealth to mainly rural areas under the Landcare program and other community programs such as Bushcare.

This level of funding to the rural sector indicates that there is significant potential for "cross-compliance", that is, making funding of programs conditional upon achieving improvements in other areas. For example, Pittock and Nias (1995) and Cameron and Elix (1991) recommend that the Commonwealth use its tied grants power (section 96 of the Constitution) when funding schemes such as Landcare and Save the Bush to ensure that vegetation clearance controls are in place before funding is provided. While cross-compliance is not in common use in Australia, some programs are starting to make use of similar concepts. For example, drought assistance is increasingly conditional upon farmers preparing a farm management plan including environmental factors (Young et al. 1996). It has been suggested that all government assistance to landholders be dependent on the landholder meeting certain standards of sustainability,

including maintenance of biodiversity (Young et al. 1996), or the preparation of a certified management plan (Crossthwaite 1995).

4.6 Chapter summary

Despite the hard work and good intentions of the participants, voluntary programs are unable to replace the native vegetation continuing to be lost through land clearance. There seems little sense in governments paying large amounts of funding to landholders and community groups to reverse land degradation and protect remnant vegetation while at the same time allowing massive clearance to take place. A strategic approach which looks at both sides of the problem, the gains made by voluntary programs, and the losses caused by clearance, and attempts to balance them, is required. Cross-compliance funding arrangements are an obvious way to achieve this balance, and are further discussed in Chapter 5.

Innovative financial incentives are also required to encourage landholders who are financially unable to forego income or to spend money on conservation measures on their land. While landholders may have a duty of care to ensure the sustainability of their land, including the maintenance of biodiversity, this can be a huge task which should be supported by transitional government funding. Recognition by governments of the potentially valuable role of NGOs in ensuring conservation on private land, for example through legislation establishing land trusts and providing initial funding for them, and the relaxation of capital gains tax laws, would also be beneficial.

Conservation agreements also have a potentially very valuable role to play in ensuring conservation on private land, particularly in the form of a covenant attached to the land title and binding on future land owners. Fixed duration agreements may have significant benefits in the short to medium term, however they offer no security that those benefits will not

be lost through future land use changes. Like other voluntary programs, conservation agreements and covenant programs that rely purely on voluntary participation provide no guarantee that biodiversity will be protected on a landscape-wide basis. For this reason other approaches involving regulation and land use planning controls are required, as discussed in Chapter 5.

Chapter 5 - Achieving conservation on private land through regulation

5.1 Introduction

> *Although strategies which encourage those already committed to conservation ideals clearly have a role to play, we cannot afford to leave to individual landholders the choice of areas to be protected. Ecosystems cut across property boundaries. By refusing to cooperate, one person with a strategic landholding can effectively destroy a wildlife corridor or leave a destructive gap in a buffer zone. Even worse, core areas may be left to the tender mercies of economically marginal landholders, pressed by their perceived short-term economic self-interest to bring them into agricultural production* (Farrier 1996:19).

As discussed in Chapter 3, there are few legal requirements aimed at ensuring protection of nature conservation values on private land in Tasmania. Rather, the government has chosen to rely on voluntary programs to encourage conservation by private landholders. Yet, as Farrier (1996) comments, leaving the decision whether to encourage, tolerate or destroy natural areas on private land up to individual landholders offers little likelihood that biodiversity can be protected at the landscape or ecosystem level. Such protection can only be achieved through concerted action across land tenures, using a strategic approach to identify areas where protection is required, and ensuring that all land uses are compatible with conservation.

The right of government agencies to ensure nature conservation by directing rural landholders to refrain from certain land uses, for example clearance of native vegetation, is a controversial issue in Australia. The rural sector has consistently demonstrated its strident opposition to the proposed regulation of vegetation clearance, or other land use restrictions in support of nature conservation (see for example Slee 1996; Barnett 1991; PLUC 1997c). This Chapter begins by examining the issue of the right of the state (that is, the nation-state, or government), on behalf of the public, to regulate rural and semi-rural land use in the interests of biodiversity conservation. The advantages and disadvantages of regulation in general are then discussed. Having established that regulation is a necessary and acceptable way to ensure nature conservation on private land, the Chapter

examines specific problems with the regulatory system in Tasmania, discussed in general in Chapter 3. The potential of the Resource Management and Planning System of Tasmania, and particularly the land use planning system, is then evaluated.

The financial implications of regulations prohibiting or restricting certain land uses have given rise to demands for compensation in other States. The problems with paying compensation, and alternative approaches, are discussed. Finally, conclusions are reached on the most appropriate form of regulatory system to ensure nature conservation on private land in Tasmania.

5.2 Private rights and public interest in land use

The tension between the presumed right of private property owners to do what they wish with their own land and that of the state to regulate land use has its roots in the development of private property ownership and associated land laws over centuries in the UK. The development of private property as a bastion against interference by the state, advocated in the writings of John Locke in the eighteenth century, was based on the assumption that private ownership of property is a benefit to the whole society (Sperling 1997a; Bromley 1991). Followers of Locke's philosophy believe that "certain property rights are some immutable and timeless *entitlement* that can only be contravened with difficulty and then only if compensation is paid by the state to make the property holder whole" (Bromley 1991:7). This position is one that impedes social change and especially the ability of the state to regulate land use in the interests of conservation and ecologically sustainable development (Bromley 1991; Sperling 1997a). It is an attitude, however, that has had great influence on the development of land use law through the English common law (Sperling 1997a) which forms part of the law of Australia.

Despite the entrenched attitudes of some private property owners, and the resistance of the courts, it is clear that during this century legislatures have made major inroads into the previous "open slather" approach to land use (Sperling 1997a). It is now well accepted that urban developments must conform with planning schemes, that they usually have to go through a

development approval process, and that environmental laws apply to restrict the use of private property in a way that damages the environment. However, the right of State and local governments to control rural and semi-rural land use, particularly in the name of nature conservation, is still subject to much emotive opposition. Rural landowners seem particularly attached to the idea that they have the right to manage their land however they see fit, which may be modified by education or advice to assist with conservation, but not by force through regulation (PLUC 1997c; Slee 1996; Giblin and King 1987). This attitude has often been expressed through the political process to stifle innovative attempts to ensure nature conservation on private land (examples are discussed in the following sections).

Bromley (1991) offers an alternative way of looking at property rights, to show that private property need not be a barrier to progressive change. If property owners are seen as having title to their property only as part of a social contract with the state and the rest of its citizens, their land use practices must be consistent with society's expectations, which now include the use of land in a sustainable way (Bromley 1991). This view is reflected in other recent writings which refer to the landowner's basic duty of care towards the land (Binning and Young 1997; Farrier 1995a; PLUC 1997b). This new approach suggests that perhaps Aldo Leopold's "land ethic" is now finally starting to infiltrate the thinking of economists and land use policy makers. Leopold, writing in the 1940s argued that humans are part of a "biotic community" and have a moral duty towards the land, that each action or inaction by humans on land should be judged by its ecological impact: "A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise ... The mechanism of operation is the same for any ethic: social approbation for right actions and social disapproval for wrong actions" (Leopold 1966:219).

Throughout mainland Australia, a body of statute law that questions the right of private landholders to do whatever they like with their land, and in effect establishes a duty of care towards the land, is gradually developing. Tasmania has the advantage of being able to judge from their experience and develop an effective and innovative form of regulatory system.

5.3 The advantages and disadvantages of regulation

As Young et al. (1996) comment, the extent of voluntary commitment by private landholders to conservation depends to a large extent on the gap between the public interest in biodiversity protection and the private interests of land users. This gap between interests is much larger where biodiversity protection is concerned than with the prevention or reversal of land degradation, which has obvious economic benefits for private landholders (Bradsen 1992; Farrier 1995a). Even where the gap between public and private interest is small, a regulatory safety net may be necessary to "deal with the recalcitrant or the incompetent" (Young et al. 1996:113).

The great advantage of regulation over voluntary and incentive approaches to nature conservation on private land is that a regulatory approach can offer a great deal of certainty - a simple law that a person shall not clear the native bush on their property is very straightforward and easy to understand. However, laws are rarely that simple; they usually involve a number of judgements which need to be made, such as the value of the particular land for protection of biodiversity, water catchment or threatened species, and often allow permission to be granted subject to conditions. These elements of discretion often lead to ineffective administration of legislation, particularly where the administrators are under pressure from hostile landholders (Farrier 1995b). In addition, enforcement is often extemely difficult, due to lack of resources in the regulatory authority, the large areas they often have to cover, and difficulties in obtaining adequate proof (Farrier 1995b).

A major disadvantage of much legislation is that it makes no provision for the active management for conservation of the area protected (Farrier 1995b; Young et al. 1996). Especially in the case of remnants of bush such as those often found on private land, active management is essential to ensure the survival of the values the legislation is attempting to protect. It is unlikely that in a purely regulatory system, a landholder who has been refused permission to clear will, in the absence of other incentives, actively manage the land for conservation. As Farrier comments "disgruntled farmers make poor conservationists" (1995b:325). Without the resources for conservation agencies to individually manage each area protected from

clearing, it is essential that landholders are able to be trusted with the responsibility for ongoing management of the land. Heavy-handed imposition of regulation is unlikely to achieve that trust or to "instil a biodiversity ethic in land managers" (Young et al. 1996:72).

Yet, as Alexandra (1995b:33) comments "Regulation is not necessarily heavy handed, it is fundamental to the functioning of many industries and social processes - we don't rely on a voluntary approach to paying taxes, nor to traffic codes. The codification of social responsibility through regulation is the mark of a civilised society".

Regulation has an important role in helping to change behaviour by landholders. It has often been commented that many landholders are aware of issues such as the need to protect biodiversity, however they are not sufficiently motivated to take action where there is "no clear, observable and quickly realisable private benefit" (Campbell 1995:77). Campbell, one of the founders of the Australian Landcare movement, comments that governments in Australia prefer non-coercive policy instruments designed to raise awareness and change attitudes, which are then assumed to lead to desired changes on the ground, however he points to recent research that has shown "that it is often the other way around - that farmers' attitudes may change in response to behaviour changes induced by, for example, prices, regulation and technology" (1995:77). One of the roles of government is to make decisions on behalf of society on large issues where individuals or isolated groups of people do not have the information base, or otherwise lack the capacity to make decisions, such as the conservation of biodiversity (Farrier 1995a). Best (1996) notes the educative role played by the native vegetation clearance controls in South Australia, where it is now generally accepted that broadacre clearance is unacceptable.

The financial implications of land use restrictions for individual landholders is a major drawback of a regulatory approach, particularly in the transition stage between the introduction of legislation restricting or prohibiting certain land uses, in effect establishing a new duty of care, and the time when the practices required by the legislation have been incorporated into every day land use decisions, methods and economics

(Binning and Young 1997). The need for financial assistance, or compensation, has major implications for the success or otherwise of legislation, due to resistance and evasion by landholders where there is often a lack of resources for enforcement, and the need for ongoing management of the "saved" land. The payment of compensation, while politically acceptable, has some major disadvantages. However, alternative approaches involving conservation agreements and financial incentives in conjunction with regulation are possible, as discussed in section 5.7.

In a field such as biodiversity conservation, where there are large gaps in knowledge, and where the maintenance of ecosystem processes and dynamics is essential (Farrier 1995b), it is important that legislation is able to be adapted to the varied needs of different regions, ecosystem types and processes. For example, it will not always be necessary or desirable for current activities by landholders to cease - the former owner of the Tom Gibson Nature Reserve in the northern Midlands of Tasmania has been able to continue grazing sheep on the reserve, which was protected for its native grasses (Gilfedder and Kirkpatrick 1995a). As Gilfedder and Kirkpatrick point out, it is often the potential for land use change which constitutes a threat to native vegetation, rather than established uses. It is important that regional conservation strategies and maps be developed as an adjunct to legislation - with the legislation containing certain overarching and immutable obligations which are adaptable to regional needs (Hodge 1991; Young 1995).

The challenge therefore is to design a system where regulation sets the standard or backdrop which requires a level of conservation on private land, to be determined scientifically and on a regional basis, and other measures are available to motivate and assist people to achieve that level of conservation.

5.4 Inadequate regulatory protection in Tasmania

As discussed in Chapter 3, the regulatory framework covering nature conservation on private land is extremely patchy. The Forest Practices Act covers forestry on private land and aims in part to protect areas of high conservation value, and threatened species. However, as concluded in

section 3.2.1, the Forest Practices Act and Code as currently administered offer no guarantee that nature conservation values are adequately protected. Forestry on private land is also not integrated into the general land use planning system, which is a major flaw if protection of nature conservation values across the whole of the landscape is to be achieved.

Apart from commercial forestry, the Tasmanian government has so far chosen to limit its legislative protection for nature conservation values on private land to threatened species only, and then in very limited circumstances. The limitations of this approach and of the specific legislation, including comparisons with legislation in other States, are discussed in the next section. Alternatives, such as general vegetation clearance legislation and habitat protection through the land use planning system, are then discussed.

5.5 Species or habitat protection?

It has been argued, for example by Bradsen (1992), and Bowman and Whitehead (1993), that threatened or endangered species legislation is an expensive distraction from the real task of nature conservation - to protect habitat in order that species don't become threatened or endangered. There is the danger that focussing on the rare can be at the expense of the commonplace, which comprises the vast majority of biodiversity, and that without a new attitude of celebrating and caring for common plants, animals and landscapes "the familiar, too, will slowly disappear, often unnoticed, until it is too late" (Hull and Boothby 1995:375).

Threatened species legislation focusses its attention on species and sometimes ecological communities which are already suffering from some threat to their survival. Under this type of legislation, "habitat can be removed and the species prejudiced unless the matter is glaring enough to result in protective action. That is, habitat remains unprotected until action is taken, by reference to some particular species, to protect it" (Bradsen 1992:178 - 179). Farrier (1995b) comments that threatened species legislation is contrary to the precautionary principle because it requires action only after a species has become threatened. The precautionary

principle has been enshrined as part of international law in the Biodiversity Convention (see Chapter 2, section 2.4.2).

Arguments in favour of threatened or endangered species protection legislation, generally focus on the value of the legislation and recovery programs in raising public awareness of nature conservation issues and ecology in general, and on the often key role of threatened species in maintaining ecosystem processes (Blyth, Burbridge and Brown 1995; Western et al. 1989). The threatening process provisions of most of the threatened species legislation are a major advance in biodiversity conservation legislation and potentially put the precautionary principle into practice. The stemming of processes which are threatening to species or communities usually involves protecting their habitat, and is therefore an important link with broader habitat protection legislation.

Bradsen (1992) argues that the best way to protect biodiversity, and to ensure survival of as many species and ecological communities as possible, is to prevent destruction of habitat, through measures such as vegetation clearance controls. According to Bradsen (1992:176) "The critical issue for an effective preventive legislative model is to identify habitat which may be significant for the conservation of biodiversity and to protect that habitat until an assessment of its significance is made". Such a legislative model would be an application of the precautionary principle, and is largely absent in Tasmania's regulatory framework, which was discussed in Chapter 3. Tasmania does, however, have threatened species legislation which attempts to provide some protection for nature conservation values on private land.

5.5.1 Threatened species protection legislation

Tasmania enacted its Threatened Species Protection Act in 1995. There are a number of serious defects in the Act, discussed in the following section by comparing it with those of Victoria, New South Wales, and the Commonwealth.

The Act follows the familiar model of threatened species legislation from other States, with the listing of species judged to be threatened by a panel of scientific experts, with nominations from the community possible, and

then various mechanisms coming into play aimed at reversing the threatened status. A major difference at the initial listing stage is that under the Tasmanian Act, only threatened species may be listed - no protection is offered for threatened ecological communities. The IEAG (1997) recommended revision of the Act to include coverage of threatened ecological communities as part of its review of forestry planning and management systems carried out for the RFA.

The determination of critical habitat for a species or community is the trigger to much of the protective potential of the Australian threatened species legislation. However, there is no obligation under the Tasmanian Act, or any of the other Acts, for critical habitat to actually be identified for listed species or communities. Obligations are only triggered *if* critical habitat happens to be identified. The Commonwealth Endangered Species Protection Act 1992 has no critical habitat provisions.

Under the Tasmanian Act, any decisions whether to "determine" critical habitat must be made by the Director of National Parks and Wildlife. Determination requires a number of formal steps including giving public notice and notifying any landholder likely to be affected by the decision, unless the Minister is of the opinion that any disclosure of the critical habitat would result in harm being done to it [section 23(6)]. The Act does not specify the matters to be taken into account by the Director in making the decision, merely that, after consultation with the Scientific Advisory Committee, he or she is satisfied that the habitat is critical to the survival of any taxon listed under the Act.

The major protective action which may be taken under the threatened species legislation is the making of Interim Protection Orders (IPOs), which may regulate or prohibit any activity which could affect critical habitat. One of the most serious criticisms of the Tasmanian Act is that an IPO is only in force for 30 business days in the case of private land, in contrast to Victoria and NSW, where orders are in force for two years; a Tasmanian IPO may be renewed, but only with the agreement of the landholder. Any landholder affected by an IPO is entitled to compensation for any financial loss suffered as a direct result of an IPO, and is also entitled to assistance, whether financial or material, before any corrective works ordered by the

IPO may be enforced, if the Minister believes the person could claim compensation (section 45). In deciding whether to make an IPO, the Minister must consider the social and economic consequences of the order, as well as any comments of the Community Review Council which consists of rural, industry, economic and scientific, but no conservation, representatives, thereby raising the prospect that, in combination with the requirement to pay compensation, the Act will be of little use in protecting threatened species on private land (TSN 1995).

In Victoria, where the Fauna and Flora Guarantee Act has been in operation since 1988, progress in determining critical habitat has been extremely slow, with critical habitat being determined for the first time in 1996 for one species, an orchid in Altona, threatened by a subdivision (Glindemann 1996). This was eight years after the legislation commenced. The NSW and Tasmanian Acts have been in operation for much shorter times, and no critical habitat has been determined under either of them (Brown pers. comm. 1998; Mahoney 1997). Under the Victorian and NSW Acts, similarly to the Tasmanian Act, there is no requirement for socio-economic factors to be taken into account at the stage of determining critical habitat, but they are very relevant to the taking of protective action under the Act. The vesting of the decision to make IPOs in the Minister, and the relevance of socio-economic factors raises doubts that the most effective action for the survival of species and communities will be taken, and has the potential to influence discretionary aspects of the administration of the legislation (Kelly 1996). Experience in the US, which has had its Endangered Species Act since 1973, and in Victoria, indicates that the potential impacts of protective action under the Acts on socio-economic factors has been a major barrier to effective administration of the Acts (Edmonds and Giddings 1992; Wilson and Clark 1995). In the US, the "branding" of land as critical habitat is so controversial that the species listing process ground to a halt when the Act was amended to require simultaneous listing of species and declaration of critical habitat; the Act was later amended to remove this requirement (Mahoney 1997).

All of the Australian legislation other than the Tasmanian Act provides for the listing of threatening processes. The Tasmanian Act however provides for the making of threat abatement plans, without a listing process. A draft

threatened species strategy, shortly to be released for public comment, identifies threatening processes and threat abatement plans will be prepared if the draft is accepted (Brown, pers. comm. 1998). As with the determination of critical habitat, there is the danger that the potential impacts on socio-economic factors of both the listing of a threatening process and the making of a threat abatement plan will weaken the protective aspects of the legislation. In Victoria, on listing of a threatening process an action statement is required to be prepared, with socio-economic consequences taken into account. However, while eighteen potentially threatening processes had been listed in the first nine years of the Act's operation, action statements had only been prepared for two, using lead shot for shooting waterfowl, and predation by foxes (Mahoney 1997). The preparation of action statements for potentially threatening processes which involve economic activity, such as the loss of hollow-bearing trees, has been problematic, with significant delays experienced in their preparation (Wilson and Clark 1995; Mahoney 1997). Similarly, under the Commonwealth Endangered Species Act 1992, only one economically significant threatening process, longline fishing, has been listed (Mahoney 1997), and is now the subject of a draft threat abatement plan (Environment Australia 1998). However, with longline fishing both birds and fishers stand to gain if the threat is abated - if birds are not caught on hooks, fish can be. The accidental bycatch of birds is not the purpose of the activity, unlike other commercial activities where the primary activity involves threats to species or ecological communities (Mahoney 1997).

Under the Tasmanian Act, the Director is not required to consider any particular factors in the making of a threat abatement plan, other than the need to control the threat (section 27). However the Minister has the final approval of a plan, after public consultation, so that political and socio-economic factors may well be major determinants of the outcome.

The clearance of native vegetation tops the list of threatening processes in a number of government reports, including the Australian State of the Environment Report (SEAC 1996) and the national biodiversity strategy (Australia 1996). However clearance of native vegetation does not appear on any list of threatening processes (Mahoney 1997), indicating that socio-economic considerations are very influential during the decision whether

to list a threatening process. In 1996, the Australian Conservation Foundation nominated native vegetation clearance as a key threatening process for listing under the Commonwealth Endangered Species Act 1992 (Habitat 1996). The listing did not go ahead despite agreement from the Endangered Species Scientific Sub-committee (ESSS), the body that decides on listings under the Act, that vegetation clearance is a major threat (Habitat 1996). The reason given by the ESSS was that listing would require a co-ordinated threat abatement plan to be prepared by all Australian governments, and the Sub-committee believed that for political reasons such co-ordinated action was not possible (Habitat 1996).

According to Farrier (1995b) threatened species legislation is often of symbolic effect only, and its enforcement is weak. Bradsen (1992) comments that the simple provisions of the US Endangered Species Act which prohibits the "taking" of a listed species are absent from the overly-bureaucratic Victorian Act. The Tasmanian Act, by contrast and despite its other faults, has a simple provision preventing the taking, which includes the damage of listed flora and fauna. This provision will be of great assistance in the protection of species such as the giant freshwater crayfish (*Astacopsis gouldi*), threatened by over-fishing as well as habitat disturbance; since 1 January 1998, it has been illegal throughout Tasmania to take the crayfish (TSN 1997). It is interesting, however, that despite the listing of the crayfish under the Act in 1996, its continued taking had been authorised by the Tasmanian Government until a community group, the Deloraine Field Naturalists, threatened court action (TSN 1997).

5.5.2 Vegetation clearance controls

Legislation exists in the majority of Australian States and Territories aimed at preventing broadscale clearance of native vegetation, the most common cause of habitat fragmentation. Tasmania is a notable exception, with no legislative provisions at all, other than for the regulation of commercial forestry. The vegetation clearance controls in South Australia, Victoria and NSW are discussed in this section, in order to judge their potential usefulness in Tasmania.

5.5.2.1 South Australia

The 1985 South Australian Native Vegetation Management Act is generally regarded as the most successful Australian legislation in reducing the rate of native vegetation clearance (Bradsen 1992). Under the previous, 1983 controls, which were introduced without warning in order to avoid panic clearing, and operated through the land use planning system, eighty per cent of clearance applications were approved (Farrier 1995a). The 1985 legislation, introduced following uproar from the rural community, contained two very significant incentives - the refusal of permission to clear, coupled with the entitlement to substantial compensation for entering into a guaranteed Heritage Agreement. The number of Heritage Agreements and the area of land covered by them rose dramatically. By 1991 there were about 700 agreements covering about 400,000 hectares of native vegetation, and 95 per cent of applications to clear were refused (Best 1996).

While the clearance controls were successful in drastically reducing the area of native vegetation being cleared, the legislation was not so successful in ensuring ongoing management of the areas protected from clearing (Harris 1996; OECD nd; Dendy 1992). Taylor (1987), writing shortly after the scheme commenced, raised doubts about the value of the consideration of isolated applications for clearing consent, with resultant isolated pockets of remnant bushland. Taylor's concern was that the legislation should operate within a regional vegetation management approach, focussing attention on areas valuable for biodiversity conservation, for example in order to protect large contiguous areas of native vegetation and habitat corridors.

The substantial compensation payments under the Act were both very expensive for the government and also to an extent abused by farmers who were applying for clearance consent merely to receive compensation (Young pers. comm. 1996; ANZECC 1996). Due both to concerns over the lack of ongoing management and the high cost of heritage agreements, a new Act was made in 1991. The Native Vegetation Act dropped the link between refusal to clear and entitlement to a Heritage Agreement and attendant compensation; the Native Vegetation Council is also required to take into account the needs of farmers to have an economically viable

property. While heritage agreements are still a focus of the Act, entering into them is now again more in the nature of a voluntary measure, with some financial incentives (including a reduced level of compensation) offered. While broadacre clearance is still prohibited, many more applications to clear remnant bush, and isolated trees, are granted; successful applicants are required to plant local native vegetation in other areas of their property (Best 1996). Later amendments of the legislation have focussed on ensuring ongoing management, and requiring the preparation of property management plans by applicants (ANZECC 1996).

Due to the high cost of compensation, it is highly unlikely that the South Australian model would be followed in Tasmania. Compensation payments, even though linked with heritage agreements, were also not conducive to conservation management of the land. Rather than compensation payments linked to loss of land value, landholders should be paid for their ongoing management of the land, under stewardship or management payments (Farrier 1995a; 1995b; 1996; Hodge 1991; Binning and Young 1997), discussed further in section 5.7. Other attempts at vegetation clearance controls in Australia have either involved no payments, or only very limited incentives.

5.5.2.2 Victoria

In Victoria, vegetation clearance controls were introduced via the "State section" of planning schemes in 1989, and confirmed through Parliament in 1991. Any proposal to clear more than 0.4 hectares requires approval; applications for less than ten hectares are considered by local councils, and those for more than ten hectares are referred to the relevant Department of Natural Resources and Environment (DNRE) area manager. As in South Australia, the controls were the subject of much acrimony, and had a very stormy passage through Parliament, being weakened a number of times (Barnett 1991). Councils are encouraged to prepare local vegetation management policies, and these, along with regional catchment strategies, and the requirements of the State provisions, are to guide administration of the clearing controls (DCNR 1996; Douglass 1996; Douglass pers. comm. 1998). While the identification of valuable native vegetation types on a regional basis is a necessary step towards ensuring their protection (Taylor 1987; HSCERA 1992; 1993), the devolution of this role to catchment

management groups is not necessarily conducive to decision-making in the interests of biodiversity conservation. As Christoff (1998) comments, Victoria's catchment management boards and committees are dominated by agricultural interests, and represented in government by the Minister for Agriculture. This has resulted in a concentration on sustainable agricultural production and water resources, and in most cases the strategies prepared "appear to regard protection of biodiversity and habitat for non-resource species and ecosystems as an afterthought." (Christoff 1998:19). Bradsen (1992) and Farrier (1995a, 1995b) also express concern that where the aim is biodiversity conservation, legislation should not be administered by land and soil conservation departments.

While the Victorian provisions do not have a conservation agreement component, ongoing management is provided for by the placing of conditions on approvals, for example requiring the setting aside of part of the applicant's land for nature conservation, or other conditions preventing land degradation or aimed at ensuring nature conservation (DCNR 1996). However, it is only possible to place conditions where an application is granted, whether in part or full; it is not possible to influence the future management of the land where an application for clearance has been refused outright. One of the major advantages of the South Australian 1985 Act was the linkage between clearance controls and heritage agreements, which aimed to ensure ongoing management of the "saved" land.

It has been estimated that with the introduction of the controls, the rate of vegetation clearance reduced by approximately two thirds, from an average of 15,000 hectares per year in the 1980s to an average of 4,735 hectares per year from 1990 to 1992, with the majority being for forestry (DCNR 1996; Binning and Young 1997). More recent estimates are not available, perhaps reflecting the massive reduction in resources to the now-named Department of Natural Resources and Environment (Christoff 1997). The Victorian clearance controls have not been as successful as the South Australian ones in limiting the area cleared, indicating perhaps weaker controls, the role of local government rather than a dedicated vegetation management authority, or the role of private forestry. South Australia does not have a native forestry industry (E. Young pers. comm. 1996). The

implementation of clearance controls via local government is discussed further in section 5.6.

5.5.2.3 New South Wales

New South Wales had no general vegetation clearance controls until 1995; a number of regional and vegetation-specific controls existed before that. In 1995, State Environmental Planning Policy (SEPP) 46 was introduced, again "overnight" in order to avoid panic clearing (Garrard 1996). SEPPs are made under the *Environment and Planning Assessment Act 1979* (EPAA) and must be applied as if they were part of local government planning schemes. As with the controls in other States, SEPP 46 was subject to much controversy and during its short life was weakened by amendment several times (DUAP 1995; 1996) and was replaced by a new Act in 1997 (the Native Vegetation Conservation Act). The Act, like the SEPP before it, is administered through the mechanism of development approval under the EPA. However, unlike most development approvals, which are usually the preserve of local councils, the "consent authority" for applications involving native vegetation clearance is the Minister responsible for land and water conservation. Under SEPP 46 the decision-maker was the Director-General for land and water conservation; this change probably reflects the political furore unleashed by SEPP 46. Most of the decision-making under the Act is now the responsibility of the Minister, including the final approval of regional native vegetation management plans, which guide decision-making on native vegetation protection, including whether vegetation clearing in a particular area is to be subject to development consent. These plans are to be made, on the direction of the Minister, by Regional Vegetation Committees, which as constituted under the Act, are dominated by rural, soil and water conservation interests, with a small number of conservation and scientific representatives. The Native Vegetation Advisory Committee, which advises the Minister, is similarly constituted. Until a plan is made for a particular region, all development applications involving native vegetation destruction are to be referred to the Minister for decision.

The new NSW Act, with its focus on strategic planning for vegetation protection, offers great promise for the protection of native vegetation in that State, however the domination of agricultural interests in key

planning and decision-making roles presents a danger that the interests of biodiversity may be relegated to secondary considerations. More positively, aspects of the Threatened Species Conservation Act, such as identified critical habitat, and recovery plans, must be adhered to in the making of plans, and the Act provides for property agreements between the Director-General and individual landholders, which may bind future land-holders and provide for financial incentives, and outline the requirements for management of native vegetation on the property. These agreements are enforceable under the Act, which provides stringent penalties, stop work and remediation orders, for any activity which is undertaken contrary to the Act.

The Act also incorporates the specific protection which was previously provided under the *Soil Conservation Act 1936* to identified "protected lands". These are areas of steep slopes and vegetation along watercourses, as well as environmentally sensitive areas. Once identified by the Minister for land and water conservation, any proposed vegetation clearance for such land is subject to the Minister's approval, unless or until it becomes included in a regional vegetation plan, which may provide that clearance does not require consent. Under the former Act, environmentally sensitive land could include land containing rare or endangered fauna or flora, land containing bird breeding grounds, wetlands, areas of scenic, archeological or historical interest (Farrier 1995a). The new Act does not define "environmentally sensitive", but if the former definition is adopted, a considerable degree of protection is offered - land containing endangered bird habitat and remnant rainforest communities outside conservation reserves had been mapped as of 1995. However the major emphasis in administration of the Act was on prevention of land degradation rather than nature conservation (Farrier 1995a), and this could be continued under the administration of the new Act. Nevertheless, this type of provision, involving the mapping of areas requiring particular attention, offers considerable nature conservation potential if matched with effective legislation.

5.5.3 *Conclusions on species and habitat protection legislation*

The Tasmanian State of the Environment recommendations report notes that impacts on threatened species would be reduced if habitat protection were "taken into account" during the development approval process (SDAC 1997). While arguably more needs to be done than simply taking habitat protection into account, it is clear that having threatened species legislation alone is a limited approach which does little to prevent threats to biodiversity. While all of the vegetation clearance controls and the threatened species legislation discussed above has problems, a combined approach offering protection to habitat and then specific attempts to protect species which are already threatened is much more effective than the Tasmanian approach, which to date involves threatened species legislation alone.

5.6 The role of local government in protecting nature on private land

5.6.1 *The potential and limitations of local government*

Local government has a crucial role to play in biodiversity protection, due to its proximity to the community, its local knowledge, potential role in education and leadership and the archetypal council functions of infrastructure provision and regulation of development on private land (Kelly and Farrier 1996). Through planning schemes and development decisions, local government has the capacity to place detailed controls over uses of land potentially destructive of biodiversity. If protection of habitat were a fundamental requirement in decision-making and planning by local government, much habitat destruction would be avoided. A number of States, including Tasmania, have planning legislation which requires State policies on environmental issues to be incorporated into local government planning and decision-making. Despite these advantages, for a variety of reasons the potential of local government as an agent to protect biodiversity is problematic.

Local government is not obliged to pay compensation as a result of imposing land use restrictions. Current planning laws generally restrict the payment of compensation to cases where land is zoned for a public purpose and the landowner loses the right to exclude the public from his or her land (Stokes pers. comm. 1997). The Tasmanian Land Use Planning and

Approvals Act 1993 provides that compensation is only payable where a planning scheme sets aside a landholder's land for a "public purpose", for example a playing field or reserve to which the public has access; compensation is not payable where a planning scheme restricts the use to which land can be put, for example changing a rural zone to a conservation zone, while still allowing the landholder control over access to the land (section 66; Stokes pers. comm. 1997). While this has the advantage that local government has the power to impose significant restrictions on land uses without having to pay compensation, the other factors discussed in this section limit the use to which this power is put by councils.

As with State governments, local government is an elected institution - the popularity or otherwise of a local government plan or decision is therefore a major factor in councillors' decision-making. As the level of government closest to the community, councils are arguably the most likely to be influenced by local opinion, which may not favour conservation. Councillors in rural shires often depend on a rural livelihood for their existence and therefore may be reluctant to restrict rural activities in favour of conservation (Giblin and King 1987). Surveys by Kelly and Farrier (1996), Durkin (1990 - referred to in Farrier 1995b) and Fook (1993, in Farrier 1995b), found that local government decision-making in NSW and Victoria on conservation issues such as land clearance and protection of wetlands to be dominated by compromise, political interference by councillors, and inconsistency of interpretation of phrases such as "ecological balance" and "biological integrity".

Giblin and King (1987) discuss the making of a Local Environment Plan (LEP) under the EPA by the Moree Shire Council (NSW) in 1984. Opposition to the draft, which included controls on clearfelling timber and environmental protection zoning for some small areas of freehold land, was "swift, strident and bitter" (Giblin and King 1987:302). After public hearings these provisions were removed; this was not an isolated case according to Giblin and King (1987). The Edwards Report into the Tasmanian planning system made veiled references to interference by councillors in the development approval process, commenting that councillors should not confuse their role as elected representatives with their role as strategic planners (Edwards 1997).

The dependence of local government on rates for its income is a powerful incentive for the approval of new developments, with rezoning and associated rate increases making subdivision almost imperative for some landowners (Kelly and Farrier 1996; PLUC 1996e). These pressures to increase the rates base also create subtle pressures to weaken environmental planning. A recent survey of Local Environmental Plans and their implementation in NSW revealed that "although the rhetoric is impressive, they nevertheless leave councils with large areas of discretion when it comes to making decisions on specific development applications. Beneath the hyperbole, the language is one of flexibility rather than binding commitment" (Kelly and Farrier 1996:10). Kelly and Farrier (1996) found that few LEPs and other planning instruments in NSW include provisions regulating development of land for agriculture or forestry, rather provisions usually relate only to landscape value or amenity, a situation which is reflected in planning schemes in Tasmania (Boardman pers. comm. 1998).

In both urban and rural areas, councils may be reluctant to limit the income-generating potential of land, both to protect their rates base, and out of a desire not to financially disadvantage their landowning constituents (Kelly and Farrier 1996). Kelly and Farrier (1996) believe that local government operates through a "culture of consent" encouraged by its largely discretionary powers to approve developments, coupled with economic and political pressures. They consider that "when it comes to the crunch, most councils will find it difficult to resist arguments based on short-term socio-economic imperatives in comparison with those which appeal to the interests of the broad Australian (and even global) community, and the long term interests of future generations" (Kelly and Farrier 1996:10).

Even with the amelioration of the impacts of developments such as subdivisions through the placing of conditions on approvals, the necessary degree of habitat protection to ensure biodiversity conservation may not be achieved; to ensure biodiversity conservation, it is often necessary to ensure total protection of an area (Farrier 1995a; Sperling 1997b). Legislation such as the NSW Threatened Species Conservation Act 1995, which operates largely through the development approval process, and

requires that recovery plans and critical habitat be "taken into account" or "considered" by councils when assessing development approval applications, is leaving a large area of discretionary decision-making open to councils, with possible adverse implications for biodiversity conservation (Kelly 1996). This aspect of local government decision-making has been perhaps recognised in the vesting of the development consent power over native vegetation clearance in NSW in the Minister for land and water resources; alternative reasons are the political sensitivity of the issue, or even the lack of resources in councils.

Local government's powers are reactive - a council generally is unable to influence the management of an area until it receives a development application, and then only if it approves the application subject to conditions; this, and lack of expertise and resources, are problems facing councils who wish to take an active role in protecting biodiversity in their municipality (Kelly and Farrier 1996). However, councils are starting to play a much more active role in positive planning through management plans and other plans such as regional vegetation plans. In NSW under SEPP 44 - Koala Habitat Protection - management plans (approved at State level) must be prepared for any lands containing core koala habitat before development consent is granted, and consent must not be inconsistent with the plan (Kelly and Farrier 1996). However, according to Sperling (1997) there is nothing in the SEPP that actually requires the management plan to retain core koala habitat. Vegetation management plans have played a key role in the administration of vegetation clearance controls in Victoria and NSW (DCNR 1996; DUAP 1996). In Tasmania, while not required by statute, councils are becoming increasingly involved as a key partner in regional conservation planning. For example a remnant vegetation management plan for the Sorell and Tasman Municipalities was recently approved by the Natural Heritage Trust, to be managed by a partnership of agencies and groups, including local councils (Dunbabbin pers. comm. 1998).

To ensure protection of biodiversity and other nature conservation values on private land, it is essential to limit discretionary decision-making which opens councils up to pressure from vested interests, and instead to use the land use planning system as a vehicle for strategic planning for sustainable

land uses (Sperling 1997). It is also essential to ensure that local government is backed up with adequate funds so that it is not subject to pressure to increase its rates base through subdivision, and has the resources and information to participate in strategic planning for conservation (Young et al. 1996). Rather than relying on general statements in documents such as local and regional environmental plans, these documents should contain specific information on areas where no development may take place, and others where development is possible subject to conditions. The traditional zoning carried out by local government in planning schemes is an example of this: however all too often there are no areas of private land zoned for conservation. Direction must be set by State governments. The potential of the Resource Management and Planning System of Tasmania as a vehicle to ensure nature conservation on private land is discussed below.

5.6.2 The potential of local government in Tasmania

Local government is responsible for the implementation of much of Tasmania's Resource Management Planning System, discussed in section 3.2.4. The Land Use Planning and Approvals Act gives councils wide powers to provide for nature conservation on private land. It is possible for councils to either refuse developments which would destroy or disturb habitat, or as noted below in the survey of Resource Management and Planning Appeal Tribunal decisions, to place conditions on planning approval in order to protect nature conservation values, or to require further information, which could be in the form of a detailed environmental impact assessment (section 5.6.4).

Councils have the power to place restrictions on clearance of native vegetation via their planning schemes, however very few have done so and the controls that do exist in rural areas are inadequately enforced, generally only being applied to towns (Sprod, pers. comm. 1996; Miller pers. comm. 1998). Recent amendments to planning schemes in Tasmania attempt to broaden and apply stricter vegetation clearance controls.

The Hobart City Council introduced vegetation clearance controls into its planning scheme in November 1997, following approval by the Land Use Planning and Review Panel (LUPRP)) (McIlhenny, pers. comm. 1998). The Panel has since been replaced by the RPDC (the Commission). Under these

provisions (the "R" amendments), the first 500 square metres of any block of land may be cleared, along with a number of other exemptions such as for fire prevention and control. While these amendments are a significant advance on the previous situation where the only controls that could be imposed were through conditions on development approval, the situation can still arise where an area of bushland could be completely cleared. For example if a block of 2,000 square metres is subdivided into 500 square metre blocks, the whole area would be exempt from the controls once the subdivision has been approved, and on areas larger than 500 square metres, every two years approval may be granted to clear a new area. Nevertheless, Hobart has some large areas of bushland in private ownership, and the amendments provide a vehicle for detailed consideration of the consequences of clearance for biodiversity, soil and land condition.

In rural areas, councils have many constituents with strong views on the right of rural landholders to do what they like with their own land, as evidenced during the public consultation carried out by the PLUC for the RFA (PLUC 1997c). Many rural councillors are themselves rural landholders (Payton pers. comm. 1998). Together with a persistent belief that clearance of native vegetation is a normal part of farming, and the large areas covered by rural municipalities, these factors place major hurdles in the way of using the land use planning system to control native vegetation clearance in rural areas.

As discussed in section 3.2.3, councils have no control over commercial forestry in areas of their municipalities that have been declared Private timber reserves by the Forest Practices Board. The lack of control of forestry on private land by local government in Tasmania is a controversial issue and can only be solved by bringing planning for private forestry within the RMPS. However, leaving aside the question of whether local government should have more say in the location of private forestry activities, councils in rural areas have exerted little control over the clearing of native vegetation which has been retained after harvesting, for example streamside reserves, resulting in areas completely clearfelled up to watercourses and then used for agriculture (Penman 1993; FPB 1995; 1996). Recent amendments to some rural planning schemes attempt to gain greater control over both forestry and vegetation clearance.

Draft 1996 amendments to the Northern Midlands Planning Scheme, intended to strengthen Council's control over clearing of native vegetation remaining after forestry operations, were opposed by local residents and the Tasmanian Farmers and Graziers Association, who considered that any controls should be implemented via the Forest Practices Act (NMC 1996). The Council disagreed with these objections and proceeded to submit the amendments to the Panel, and the amended planning scheme prohibits the removal of any vegetation whose retention has been required by a Timber Harvesting Plan (NMC 1995). Some of the representors also objected to the application of any vegetation clearance controls in the rural zone, however, as pointed out in the Council's response to the representations, the general vegetation protection provisions in the Scheme at that stage exempted the rural zone from the controls, and there was no plan to change that provision (NMC 1996). However, the final amended Planning Scheme, certified by the Panel, does not exempt the rural zone from these provisions. While there is little room left for broadscale vegetation clearance in the municipality, which has lost much of its native vegetation (Payton pers. comm. 1998), these provisions mean that for the first time, vegetation removal in the whole of this predominantly rural municipality must be the subject of a development approval application. However, the exemptions listed in the provision, for example for firewood collecting, mean that in practice only broadscale vegetation clearance will be covered.

The Meander Valley Planning Scheme, also amended in 1997, includes similar controls on vegetation clearance, and also prohibits the destruction of any vegetation retained under the provisions of a Timber Harvesting Plan (MVC 1995). While these provisions are an improvement on a complete lack of control of vegetation clearance in rural areas, it must be remembered that the provisions of the Forest Practices Code, under which Timber Harvesting Plans are made, are considered by many to be inadequate (as discussed in section 3.2.1), and there is no guarantee, for reasons discussed above, that the vegetation clearance provisions will be enforced by councils.

The draft Model Planning Scheme Framework, released in October 1997 and currently being considered by the Panel, provides an ideal

opportunity for the State government to ensure that all Tasmanian planning schemes control the clearance of native vegetation. The draft contains no provisions which require any control over native vegetation clearance, and for the most part consists of little more than a series of headings, however one or more schedules dealing with vegetation clearance are likely to be prepared (Miller pers. comm. 1998). The aim of a schedule is to provide guidance to councils on a specific aspect of planning, which currently is not provided by any State government instrument, and to achieve consistency among planning schemes (DELM 1997). The making of a schedule requiring consistent vegetation clearance controls to be included in all planning schemes would be a major advance on the current lack of controls in most of Tasmania.

The success of any controls is depedent upon the will of councils and their staff to implement them; a will which has been lacking to date (Miller pers. comm. 1998; Sprod pers. comm. 1996). Under section 48 of LUPAA, Councils are required to implement and enforce their planning schemes. However, as pointed out by Kelly and Farrier (1996), there is a tendency for local government to approve developments due to the peer and financial pressures it faces. The provisions of LUPAA with respect to citizen appeals and enforcement will be vital as a means of ensuring that councils abide by the greatly improved environmental protection and nature conservation provisions being placed in planning schemes by the Commission, and hopefully under the Model Planning Scheme. "Any person" may object to a development application submitted to a council, and may then appeal to the Tribunal if council grants the application [sections 57(5) and 61(5)]. This provision has been used very effectively by environmental and community groups to appeal against inappropriate decisions of councils, for example the Break O'Day State Coastal Policy case. A survey of 1996 and 1997 Tribunal decisions (see below) shows that the Tasmanian Conservation Trust has been very active in both appealing against council decisions, and supporting council decisions refusing developments on environmental grounds. Section 64 of the Act provides for citizen enforcement of the legislation - any person who has a "proper interest in the subject matter" (including a council and the Commission) may apply to the Tribunal to have any activity contrary to the Act or a planning scheme stopped, or to make good any damage. These provisions provide ample

legal powers to ensure that any vegetation clearance controls are complied with, however they rely on the vigilance, energy and resources of local residents and environmental groups to use them.

5.6.3 Zoning for conservation

As discussed in section 5.6.1, however, a far more effective method of ensuring biodiversity conservation through the land use planning system is through strategic planning for conservation. By providing clearly in advance that an area will not be subject to any development, the situation does not arise where councils have to make decisions on discretionary land uses, and all parties, developers, councils and the local community, are aware of the status of that piece of land, until someone wants to have it rezoned - a decision which ultimately belongs to the Commission and is open to extensive public consultation.

There are very few areas of private land in Tasmania which are zoned exclusively for conservation (Stokes pers. comm. 1997). Zoning for conservation or other restricted land uses which reduce the market value of the land have the disadvantage, from councils' viewpoint, that they reduce the rateable value of the land, and hence council income (Boardman, pers. comm. 1998). However, zoning private land for landscape or skyline protection, which imposes restrictions on the uses to which the land can be put and the destruction of native vegetation, is increasingly being used by councils. SDAC (1996) notes that fourteen Tasmanian councils had provision for identifying special areas for landscape protection, including vegetation protection areas, in their planning schemes (although the report does not state whether any special areas have actually been identified in the schemes).

Clarence City Council, on Hobart's eastern shore, has recently been the focus of sustained controversy over the zoning and protection of semi-rural bushland. In February 1996 the Council refused an application for a subdivision of 64 blocks on a hundred hectare property in the Howrah Hills. A local resident's group had run an effective campaign against the subdivision on the grounds of the high conservation value of the land, which has extensive stands of some of the rarest plant communities in Tasmania, such as *Eucalyptus risdonii* grassy low open forest, and open

grassy *Eucalyptus globulus* habitat for the rare swift parrot, and its value for local amenity and recreation (Della Fontana 1996; Ashton 1996). The council had also submitted a draft amendment to the planning scheme recommending a lower residential density for the area (Ashton 1996). On the basis of the area's high conservation, landscape and recreational values for the local community, the Panel decided to change the zoning not to lower density residential, as submitted by the council, but to landscape and skyline protection, which imposes much lower residential densities (twenty hectare blocks) and stricter environmental controls on development (Harmer pers. comm. 1998). The landowner (a company) appealed against the Panel's decision to the Supreme Court on the ground that the Panel had denied it natural justice by not seeking its comment on the proposed new zoning (Harmer pers. comm. 1998).

Also in Clarence, recently another developer, Medbury Pty Ltd, has proposed to create a purportedly environmentally benign housing estate on its 119 hectare property in the Rokeby Hills, currently zoned rural and public open space. The developer, in consultation with some local community, conservation group and council representatives over twelve months, has proposed 20 housing sites on a total of four or five hectares, with the remaining 114 hectares proposed to become a "bushland park" with the title given to Clarence City Council (LGAT 1997). The Council has not yet made its decision on this innovative suggestion, which will require rezoning of the area, and there is disagreement among conservation groups, with the proposal supported by the Tasmanian Conservation Trust but opposed by the local Landcare group, which believes that the local community want the area left untouched by any development (Waterhouse 1998). The Council has partially refused and substantially modified a subdivision proposed by Medbury at Mount Rumney, on the grounds that the area is zoned public open space, and contains special areas designated to protect the skyline and woodlands. The Council's decision was upheld by the Resource Management and Planning Appeals Tribunal on appeal[7].

Zoning of land in planning schemes specifically for conservation or for associated objectives such as landscape protection, is an ideal way of

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[5] Between J B Medbury Pty Ltd and Clarence City Council, J 249/97.

ensuring that the nature conservation values of particular areas are protected. The LUPAA provides for an open, accountable system of decision-making with respect to conservation values on private land, other than in the case of certain exceptions from the RMPS, in particular the declaration of Private timber reserves. The exemption of certain, often large, forested areas, both private and public, from any landscape and biodiversity planning system is counterproductive and would seriously weaken any attempt at detailed planning for conservation in Tasmania. As discussed in section 3.2.1, the mechanisms used under the Forest Practices Act and Code are inadequate to ensure protection of nature conservation values, and there is no public participation process or accountability of decision-making.

5.6.4 Survey of planning appeals

In order to determine the use of provisions of planning schemes, and other mechanisms available to councils, to protect nature conservation values on private land, a survey of all 1996 and 1997 decisions of the Tribunal was carried out. The Tribunal hears all appeals against council decisions made under the LUPAA, and also LUPAA section 64 cases (see Table 5.1).

One limitation of the survey was that many of the cases were consent decisions made as a result of mediation conferences between the parties, and the details of the background to these decisions are not given in the Tribunal's reports. Even in these cases, however, it is possible to determine the number of cases in which nature conservation issues were relevant to the appeal, and the means by which the Tribunal dealt with these issues. Another limitation of this method is that not all cases involving nature conservation issues would have been appealed; a survey of all council decisions would be required to determine the total number of applications considering these issues, and their results.

The survey found that in very few cases in both years (5.5 % in 1996 and 4.1 % in 1997) were nature conservation considerations the main or a major ground of appeal. There were no cases involving applications to clear native vegetation. Cases which did reach the Tribunal tended to involve fairly major issues, such as large subdivisions involving destruction of native vegetation, or sensitive areas such as watercourses or high

conservation value areas. This indicates either that nature conservation issues were adequately dealt with by councils in cases involving smaller subdivisions, or that there was no-one with the resources or knowledge to object and later appeal those decisions. Two section 64 cases were brought by councils where native vegetation had been destroyed without permission - one where vegetation was destroyed in order to establish a recycling facility at Georgetown[8], and one where a dune system and its vegetation had been badly disturbed[9]. In both cases the Tribunal ordered restoration.

Table 5.1 Resource Management and Planning Appeals Tribunal decisions considering nature conservation issues - 1996 and 1997

	1996	1997
Total no. of Tribunal decisions	325	267
No. involving applications for vegetation clearance permit	-	-
Nature conservation the main or major ground of appeal	18	11
Council refused application - Tribunal allowed it with conditions	4	3
Council allowed application with conditions - Tribunal refused application	1	-
Council refused application - Tribunal agreed	3	3
Council allowed application with conditions - Tribunal changed conditions	5	3
Council allowed application with conditions - Tribunal agreed	-	1
Council allowed application with conditions - Tribunal required EIS to be prepared	2	-
Deemed approval - section 59*	1	-
No. of section 64 applications**	2	1

* Section 59 provides that if a council has exceeded the time limit for making a decision, the application is deemed to have been approved, and the Tribunal must decide the conditions.

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[8] Between Georgetown Council and A Waters, consent decision, J 131/97.

[9] Between Waratah/Wynyard Council and D and J Weller, consent decision, J 142/96.

** One was an application by a private citizen against another to restrain felling timber; appeal dismissed, no background or reasons given; the others were by councils - Tribunal ordered activities restrained and/or remediation.

Without surveying all council decisions, it is not possible to determine the extent to which councils are refusing or modifying developments which have potentially adverse environmental impacts. However, of the cases appealed on mainly nature conservation grounds and ignoring the section 64 and section 59 cases, 46% in 1996 involved an outright refusal by council of a development application, while in 1997 this had increased to 60%. In 73% of the 1996 appeals, council had allowed the application subject to conditions; this had fallen to 40% in 1997. With such a small sample, it is difficult to make conclusions, however there does seem to be a trend towards councils taking a tougher line where nature conservation is a consideration. In only one case in the two years, the State Coastal Policy case[10], did the Tribunal completely overturn a council's decision to allow a development application. In three cases in each year (20% in 1996; 30% in 1997) the Tribunal agreed with the council's decision to refuse a development application. In 60% of the 1996 cases and 70% of the 1997 cases, the Tribunal placed conditions on approval, amending the council's conditions in every case except one in 1997. It therefore appears that the Tribunal is more likely than councils to approve a development, subject to conditions. (In the remaining 1996 cases, the Tribunal ordered the applicant to prepare an environmental impact assessment of the development [the same development was involved in both cases] to be submitted to council). The Tribunal also tended to restrict its consideration strictly to the planning scheme in question, or the State Coastal Policy, and refused to take into account other strategic planning documents which councils or other government agencies have made to guide their decision-making. It has been pointed out that this legalistic approach by the Tribunal is contrary to its obligations to implement the sustainable development objectives of the RMPS (Lynch 1996).

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[10] Between Tasmanian Conservation Trust Inc. and Break O'Day Council & Glencoe P/L & the Estate of the Late G H Napier; Between Break O'Day Ratepayers Association Inc. and Break O'Day Council & Glencoe P/L & the Estate of the Late G H Napier; Between W J Manning and Break O'Day Council & Glencoe P/L & The Estate of the Late G H Napier, J 260/96.

Apart from giving an indication of numbers of appeals involving nature conservation issues, the survey revealed a number of mechanisms being used by the Tribunal to ameliorate the adverse impacts of developments on nature conservation values of private land. These include conditions on development approvals such as: requiring covenants to be placed on land titles to ensure protection of native vegetation and streamside reserves; the transfer of areas of high conservation land to council ownership to be looked after as public open space; the design of housing to avoid bird strike against windows; prohibiting the keeping of domestic animals; and the design of subdivisions to prevent run-off and siltation of waterways.

While these conditions are to be applauded, any subdivision in an environmentally sensitive area will destroy at least some habitat, and some of the conditions placed by the Tribunal on approvals have included the destruction of native vegetation for fire and road safety purposes. In many cases, refusal of the application would have been more in the interests of nature conservation, however there is no guarantee that any alternative use of the site, unless it is zoned for conservation, would be more conducive to nature conservation. At least with approval for subdivision, the Tribunal was able to place innovative conditions preventing destruction of habitat as far as possible. Conservation covenants to protect wildlife are voluntary under the National Parks and Wildlife Act, however by using the development approval process, the Tribunal has been able to *require* covenants to be entered into.

In the case of high conservation value land where the owner has been denied permission to subdivide, or to carry out some other use, it is imperative that mechanisms are in place to prevent destruction of the conservation values. There is generally nothing preventing, for example, firewood collection on land zoned rural. If the land has been identified as critical habitat for a threatened species, some protection is available under the Threatened Species Protection Act, however this is only for thirty days, unless an agreement is reached with the landowner for lasting protection. Even zoning for conservation, while preventing inappropriate developments, provides no means of ensuring active management for conservation where required. Additional means, discussed in section 5.7,

are required to ensure ongoing management of high conservation value private land.

5.6.5 A State policy on protection of native vegetation

As discussed in section 3.2.4, a State policy made under the State Policies and Projects Act is required to be incorporated into planning schemes and is enforceable under that Act and the LUPR. The value of the State Coastal Policy (Tasmania 1996) in controlling adverse impacts of coastal development has already been seen. There is great potential for a State policy on native vegetation protection to similarly control clearance of native vegetation through the land use planning system.

The greatest impact of a State policy would be achieved by the adoption of a strategic planning approach, identifying nature conservation values across the State, and how those values are to be specifically dealt with by local government through the planning process. In the interim, until the strategic planning process was completed, the Policy would impose a moratorium on vegetation clearance without approval, which would be by councils with referrals to a specialist unit to be established in the Department of Environment and Land Management (DELM). A moratorium on vegetation clearance could be imposed via an interim State policy (section 12 of the State Policies and Projects Act). While this would be unpopular with the rural sector, it would be a means of circumventing some of the long drawn out process of making a State policy, criticised by the Edwards Report (Edwards 1997).

Two suggestions for the making of State policies on native vegetation have been made in recent State agency reports. The recommendations of the PLUC (1997b) for a State policy identifying high conservation value forest areas were discussed in section 4.4.4.1. In its State of the Environment recommendations report, SDAC (1997) built on PLUC's recommendation by recommending a State Policy on Remnant Native Vegetation. However, neither PLUC's nor SDAC's proposal involves any compulsory controls on vegetation or other habitat clearance. SDAC recommends that the State Policy include maps of all identified critical habitat for threatened species, and that on receipt of an application for development in one of these areas, the relevant local council would be required to refer the

application to the Director of Parks and Wildlife, to be dealt with under the Threatened Species Protection Act. The limitations of the Act have been discussed in detail above. Further discussion of the proposed State Policy by SDAC implies that only voluntary mechanisms, such as conservation covenants and agreements under the National Parks and Wildlife Act would be used with respect to private land.

However, SDAC does acknowledge, in a number of places, the significant role played by local government and the Panel in controlling development in sensitive areas. It may be that SDAC has decided that it would be better to quietly allow the Panel to continue with its work under its existing ample powers under the LUPAA, but with improved information available to it under various mapping and information gathering recommendations made by SDAC, than to suggest a specific State Policy which could be the subject of a great deal of political opposition. The Edwards Report makes comments along these lines - that significant advances in land use planning have been made by government agencies advising councils and LUPAA on matters of concern, for example planning for bushfire prevention (Edwards 1997). However, as Edwards notes, this is merely an advisory role only, and has no statutory force.

The Panel (now the Commission), some local councils, and the planning arm of DELM have made significant advances in identifying areas for added protection, and introducing vegetation protection into planning schemes. However, reviewing and amending planning schemes is at the moment an ad hoc process, and there is no major impetus or requirement for identifying and protecting nature conservation values on private land. A State Policy on native vegetation protection, as suggested above, would require biodiversity conservation to be a major focus of the land use planning system.

5.7 Combination approaches

Any regulatory system which prohibits or restricts land use has financial implications for landholders, and hence socio-economic and political implications. A regulatory approach also has the disadvantage that it generally does not make provision for ongoing management for

conservation. As discussed in Chapter 4, a number of financial incentives are available to encourage landholders to manage their land for conservation, as well as to provide some financial recompense for lost economic opportunities.

As noted above (section 5.3), regulation often serves to change community attitudes. Gradually the new requirements become accepted as a part of life. Regulations restricting or prohibiting land use are a way of establishing a new duty of care by landholders towards their land and the environment. However, in the process many will suffer financial hardship, and financial assistance should be available to assist with the transformation away from damaging land uses (Binning and Young 1997; Farrier 1996). However, compensation for loss of value of land should not be paid, as this merely perpetuates the belief that land's value lies in its exploitation, and serves to allow landholders to deny that they have any responsibility for conservation (Farrier 1995a, 1995c, 1996), as was seen with the South Australian legislation, discussed in section 5.5.2.1 above.

Conservation agreements, and in particular covenants placed on the land title, are a valuable mechanism to help ensure ongoing management of land for conservation, as discussed in Chapter 4. Combined with some financial assistance, regulation can be a powerful motivator for people to enter into conservation agreements. If a base level of conservation is required, defined by legislation, a commitment to ongoing conservation measures on the land in exchange for payments would be an ideal way to ensure management of high conservation land without bringing it into the public reserve system (Hodge 1991; Young 1995; Farrier 1995a, 1995c, 1996).

Tasmania already has legislation providing for management agreements and conservation covenants, which has received little use due to a lack of incentives, both financial and regulatory. It would be possible, in conjunction with the State policy on native vegetation protection proposed above, to develop a system of financial incentives, with Commonwealth government funding through sources discussed in Chapter 4, to motivate private landholders towards caring for the conservation values of their land.

5.8 Chapter summary

In the late twentieth century, it is clear that the State has the right, on behalf of the public, to regulate land uses in order to protect biodiversity in the interests of the environment. Tasmania has been particularly slow in developing any regulatory response to needs for biodiversity protection on private land. There are no habitat protection regulations, other than for commercial forestry, which are of limited effectiveness, and the threatened species legislation, which apart from the "taking" section and the provision for threat abatement plans, is very weak. While there have clearly been problems with both habitat protection and threatened species legislation in other States, Tasmania is in the position where it can learn from that experience, and devise an innovative and effective regulatory system to protect nature conservation values and biodiversity on private land.

The Tasmanian Resource Management and Planning System has the potential to require a high level of nature conservation on private land. Some advances in that direction have been made by the Panel and individual councils, however a State Policy on native vegetation protection would give the required impetus and direction to ensure that biodiversity conservation is a major plank of our land use planning system. Financial incentives to assist with hardship, and to encourage ongoing management through conservation agreements, would greatly enhance the effectiveness of controls through regulation.

Chapter 6 draws conclusions on current and potential measures to protect nature conservation values in Tasmania. The Chapter also makes recommendations for an integrated system of regulatory, voluntary and financial incentive measures to achieve a much higher level of conservation on private land.

Chapter 6 - Conclusions and recommendations

6.1 Conclusions

Native vegetation clearance, including private land, is a major cause of habitat fragmentation and biodiversity loss. In Australia many areas of high nature conservation value, including those containing rare and threatened species, are found on private land. The existence of nature conservation values and ecosystem processes across whole landscapes, or bioregions, means that nature conservation efforts can no longer be limited to public land only. Nature does not recognise tenural boundaries; it is not possible to adequately plan for biodiversity conservation without including land across all tenures, including private land.

Conservation of natural values on private land to protect biodiversity is now an international requirement, through the Biodiversity Convention. Australia is a party to the Convention, and also to the Framework Convention on Climate Change, which recognises the role played by "carbon sinks" such as forests in reducing greenhouse gases, and requires their maintenance. To date, the Commonwealth government's response to both of these agreements has been less than enthusiastic; it has actively sought to impede progress towards reduction of greenhouse gas emissions, and has taken very few steps towards requiring the retention of habitat for biodiversity. While native vegetation clearance has been recognised by major Commonwealth agency reports as a major threat to biodiversity, the Commonwealth has made no attempt to avert this threat through regulation.

The Commonwealth's strategy it seems, is to devote resources to encouraging community groups to both protect areas of native bushland and to restore lost native vegetation. While voluntary programs have a major and vital role to play in protecting nature conservation values, including on private land, it is not possible through a purely voluntary approach to ensure conservation of natural values across a whole landscape. If any private landholder whose land has high nature conservation values, or contains an threatened species or community refuses to participate in a voluntary program, there is nothing that can be

done to ensure adequate conservation of that land, and of the broader ecosystems and bioregion of which it forms part. The Commonwealth is providing large amounts of funding to voluntary programs, while at the same time allowing the destruction of much larger areas of native vegetation.

Tasmanian landscapes and ecosystems have been extensively modified by clearance of native vegetation, and inundation for hydro-electricity. While a large proportion of the State is contained in protected areas, these are concentrated in parts of the State, mainly the west and south west, which contain few economically valuable resources. Areas suitable for agriculture and urban settlements have been extensively modified, and many native vegetation communities found in these areas are now rare or threatened, or are the habitat for threatened species. Despite this, the Commonwealth's strategy of focussing on voluntary measures is reflected in Tasmania, where few attempts have been made to ensure protection of nature conservation values on private land through regulation. The legislative measures which do exist, under the Forest Practices Act and Code, the National Parks and Wildlife Act, and the Threatened Species Protection Act, have major limitations and are inadequately resourced. There is no integrated system for ensuring protection of nature conservation values on private land, with responsibility spread between the Parks and Wildlife Service, the Forest Practices Board, and local government.

Tasmania does have a mechanism, the Resource Management and Planning System, which is ideally suited to establishing such an integrated system. While local government has some major drawbacks as a vehicle for nature conservation, in particular that its closeness to the local community makes it vulnerable to political and economic pressure to approve developments such as subdivisions, and not to take an active role in preventing vegetation clearance, it nevertheless can, and has, played a positive role in promoting conservation in Tasmania. Identification of areas with nature conservation values and protecting them through zoning in planning schemes, which are made by the Resource Planning and Development Commission following extensive public consultation, is an ideal way to ensure that all concerned with an area - the council and its

landowners, developers and other members of the community, are certain of the land use restrictions that apply to any particular land.

A State policy on native vegetation protection could provide a strategic approach to planning for native vegetation conservation across the whole of Tasmania through requiring identification of areas requiring protection, on a regional basis, and the means by which they are to be protected. Much of this identification work has been done, with respect to forests, by the RFA, however a great deal more mapping and survey work would be required. Any planning approach that is not comprehensive will not be effective: it is important therefore that forested areas on private land can no longer be exempt from the land use planning system. A moratorium on destruction of native vegetation, via an interim State policy, would help to ensure that valuable habitat is protected while the State policy is developed and regional planning carried out.

Experience to date with attempts to ensure conservation on private land suggests that regulation should be part of a range of measures, that by itself, regulation is unlikely to be effective in ensuring the degree of conservation effort on private land needed to ensure protection of biodiversity. The effectiveness of clearance controls, for example, is likely to be reduced if no efforts are made towards the future management of the land for conservation. Without complementary measures such as voluntary programs, financial incentives, conservation agreements and extension services, the motivation and information base essential for ongoing management will not exist. Regulation is therefore an essential component of a mix of policy measures. It is also essential that a political commitment is made to providing the resources, financial and legislative, to ensure that programs can be carried out.

The following recommendations outline a combined approach to ensuring the protection of nature conservation values on private land in Tasmania.

6.2 Recommendations

1. The Commonwealth should use its tied grants power under section 96 of the Constitution to ensure that only States which have adequate

controls on native vegetation clearance receive funding under Commonwealth environmental programs.

2. The Tasmanian Forest Practices Act and Code should be amended to require independent scrutiny of all Timber Harvesting Plans for private land. In particular, the Act should be amended so that company appointees are no longer authorised to approve the company's timber harvesting plan, and a section should be inserted requiring all timber harvesting plans to be reviewed by Forest Practices Board specialists, in conjunction with Parks and Wildlife staff when certain factors, including the potential presence of threatened species, are present. Increased resources should be provided to both the Parks and Wildlife Service and the Forest Practices Board to ensure that they are able to meet their obligations under the legislation. The Forest Practices Board should be completely funded by Parliament, with no funding from industry, which compromises its independence. Rather, increased revenue should be raised from industry through government charges, and this money used to fund the Forest Practices Board.

3. Private forestry should become subject to the Tasmanian Resource Management and Planning System. Section 20(7) of the Land Use Planning and Approvals Act, which exempts commercial forestry in Private timber reserves from the land use planning system, should be repealed. Subjecting commercial forestry to the same land use planning considerations as other land uses will enable a whole landscape approach to biodiversity conservation to be taken. Zoning under the LUPAA will be able to preclude decisions to create Private timber reserves, so that if an area is zoned for conservation or landscape protection, it will not be able to be declared a Private timber reserve (and existing declarations contrary to planning schemes will be annulled). The Forest Practices Act should be amended so that the process of declaring private timber reserves becomes subject to objection and appeal from councils and concerned members of the public. The practice of forestry on private land should also become subject to the Resource Management and Planning System, so that citizen enforcement mechanisms, such as those found in the Environmental Management and Pollution Control Act and the LUPAA are available.

4. The Forest Practices Code should be reviewed by an independent panel of experts on conservation biology, land and water conservation, and forestry, to ensure that its provisions, with respect to private and public land, ensure the protection of conservation and other environmental values.

5. The Threatened Species Act should be amended so that it:

- protects threatened species as well as communities;
- contains an obligation for the presence of a threatened species on particular land to be notified;
- contains realistic Interim Protection Orders which last for two years and are not subject to an entitlement to compensation;
- provides for the negotiation of management agreements between the Minister and landholders subject to Interim Protection Orders, including payments and other assistance consistent with the degree of effort required of the landholder;
- gives the Director of National Parks and Wildlife the final decision on Interim Protection Orders and threat abatement plans. Socio-economic factors should be irrelevant to these decisions. Any socio-economic consequences should be dealt with by other processes, including management agreements with ongoing payments;
- provides for the listing of threatening processes.

6. The National Parks and Wildlife Act should be amended so that:

- the declaration of a private wildlife sanctuary places enforceable obligations on the landholder as well as the public, even before a management plan is made;
- management plans are compulsory for all private wildlife sanctuaries, and are accompanied by management agreements that allow for payments and other assistance consistent with the degree of effort required of the landholder, as well as conservation covenants binding on the land title;
- the protection of threatened species is guaranteed by the timber harvesting plan process; Section 37F which provides that a timber harvesting plan, originally rejected due to the presence of a threatened species, must be granted if the Minister and landholder have not agreed on compensation, should be repealed;

- compensation is not available where a timber harvesting plan has been rejected due to the presence of a threatened species, rather the Act should provide for the Minister and the landholder to enter into a management agreement, accompanied by a conservation covenant, as noted above.

7. A State policy on native vegetation protection should be developed. The policy should require the identification of areas with nature conservation values, across Tasmania but on basis of bioregions identified in the policy, and the measures to be taken through zoning in relevant planning schemes, to protect them. Regional committees consisting of representatives of local councils, conservation and community groups, industries, and representatives of government departments, should be set up to supervise the mapping and survey work and make recommendations to the Resource Planning and Development Commission, on the identification of particular areas for conservation, and the level of protection required. These decisions would be required to be incorporated into planning schemes, by force of the provisions of the State Policies and Projects Act, and the LUPAA, and administered by local government once finalised. The Policy should have the power to control existing uses, such as grazing and firewood collection, as well as changes in use through the development application process.

8. While the State policy is being formulated and regional conservation plans are being prepared, a moratorium on native vegetation clearance should be imposed by means of an interim State policy. All native vegetation clearance, with minor exemptions, would be prohibited except with the approval of local committees consisting of representatives of the relevant council and the Department of Environment and Land Management.

9. Greatly improved resources should be made available for local government and other agencies and groups involved in developing regional plans and administering the native vegetation clearance procedures. The Commonwealth government should provide funding to compensate councils which forego income from rates by refusing developments on high conservation value land.

10. A package of financial measures, including short-term assistance where a landholder's current means of livelihood is prevented by the vegetation clearance controls, and longer term management payments should be made available through Commonwealth programs. Current, and preferably increased, funding should be provided for the Bushcare program, the Land for Wildlife program and the conservation covenant program administered by the Parks and Wildlife Service.

11. The State government should establish by legislation and provide seed funding for a non-governmental organisation to purchase high conservation value private land, negotiate conservation covenants with landowners and operate a "revolving fund", along the lines of the Victorian Trust for Nature.

12. Taxation provisions which currently discourage conservation action on private land, including the donation of high conservation value to non-governmental organisations, should be removed. Effective taxation incentives for conservation on private land should be developed.

Postscript

Section 3.2.3 discusses the Meander Valley Council's appeal against a decision of the Forest Practices Tribunal. Since this thesis was written, the Supreme Court of Tasmania's decision[11] in the case has been reported. The Court handed down its decision in March 1998.

The Court (Justice Crawford) upheld the Council's argument that the Land Use Planning and Approvals Act 1993 prohibited the use of the land in question for forestry, via provisions in the Meander Valley Planning Scheme. The Forest Practices Act 1985, section 8 (2) (d), required the Forest Practices Board (and the Tribunal) to refuse an application for a declaration of land as a private timber reserve if, by virtue of the operation of any Act, the owner of the land was prohibited from establishing forest or growing or harvesting timber on the land. The provisions of the planning scheme effectively prohibited any forestry on the land, and the Tribunal made an error of law by not taking judicial notice of the planning scheme.

This decision has major implications for land use planning, and regional planning for biodiversity, in Tasmania. If allowed to stand, the decision means that councils, elected bodies, are able through planning schemes, which have extensive public input, to ensure that areas of private land are protected from logging. However, at the time of writing (July 1998), the Government had introduced amending legislation which, if passed, will ensure that the Court's decision is reversed[12].

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11 The Queen v. K A M Pitt, G McCutchan, J Swan and Exparte Meander Valley Council.

12. Michael Hogan, pers. comm., Planner, Department of Environment and Land Management, July 1998.

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